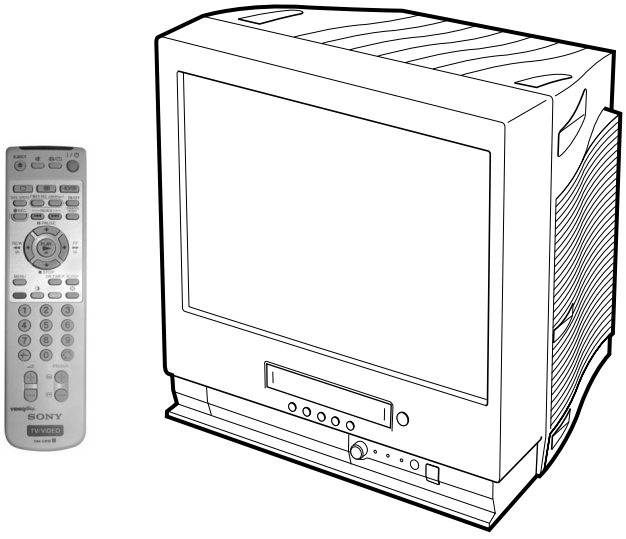
Self Diagnosis Supported model

SERVICE MANUAL BC-5 CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-14FV1B	RM-C816	FR	SCC-xxxx-A
KV-14FV1D	RM-C814	AEP	SCC-xxxx-A
KV-14FV1E	RM-C814	ESP	SCC-Q62B-A
KV-14FV1U	RM-C815	UK	SCC-xxxx-A

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21FV1B	RM-C816	FR	SCC-xxxx-A
KV-21FV1D	RM-C814	AEP	SCC-xxxx-A
KV-21FV1E	RM-C814	ESP	SCC-Q62A-A
KV-21FV1U	RM-C815	UK	SCC-xxxx-A



MICROFILM

* Please file according to model size. ....□

FD TRINITRON® COLOUR VIDEO TV

SONY®

TV Section

TV system:
I

Colour system:
PAL, SECAM
NTSC 3.58, 4.43 (only Video In)

Channel Coverage:
UHF: B-21, B69

Picture Tube:
- KV-14FV1U:
  Flat Display Trinitron.
  14" (approx. 37 cm. measured diagonally)
- KV-21FV1U:
  Flat Display Trinitron.
  21" (approx. 55 cm. measured diagonally)

VCR Section

Format:
VHS Standard

Video recording system:
Rotary 2-head helical scanning system

Audio recording system:
Monaural

Video signal:
This Video TV is designated to receive TV programmes based on PAL (I) colour system and to record and play on PAL system. The Video TV can also play tapes on NTSC colour system.

Tape speed:
PAL:
SP: 23.39 mm/sec.
LP: 11.70 mm/sec.

NTSC (playback only):
SP: 33.35 mm/sec.
LP: 11.12 mm/sec.

Maximum recording time:
SP: 4 hours with E-240 tape
LP: 8 hours with E-240 tape

General

Rear Terminals
1/ 21-pin scart connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.

Front Terminals
2 video input – phono jack
2 audio input – phono jack
headphones jack

Clock
Quartz locked

Clock back up
Approx. 7 days

Power requirements
220-240 V AC, 50Hz

Sound Output:
1 x 6W (music power)
1 x 3W (RMS Mono)

Power Consumption:
- KV-14FV1U: 86 W
- KV-21FV1U: 107 W

Standby Power Consumption:
< 2 W

Dimensions:
- KV-14FV1U: Approx. 375 x 398 x 407 mm.
- KV-21FV1U: Approx. 489 x 500 x 477 mm.

Weight:
- KV-14FV1U: Approx. 15.6 Kg.
- KV-21FV1U: Approx. 27.2 Kg.

Accessories supplied:
1 Remote Control (RM-C815)
2 Batteries (IEC designated)

Other features:
Teletext, Fastext, TOPtext
Sleep Timer
Wake UP Timer
Parental Lock
Auto Head Cleaner
Dial Timer
VideoPlus+

Design and specifications are subject to change without notice.

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION

APRES AVIOR DECONNECTE LE CAP DE L'ANODE, COURTCIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CIRTIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SELF DIAGNOSTIC FUNCTION

1. OUTLINE

- The units in this manual contain a self-diagnostic function.
- If an error occurs, the STANDBY lamp will automatically begin to flash.
  The number of times the lamp flashes translates to a probable source of the problem. A definition of the STANDBY lamp flash indicators is listed in the instruction manual for the user's knowledge and reference.
- If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

2. DIAGNOSTIC TEST INDICATORS

- When an errors occurs, the STANDBY lamp will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the lamp will identify the first of the problem areas.
- Result for all of the following diagnostic items are displayed on screen. No error has occured if the screen displays a "0".

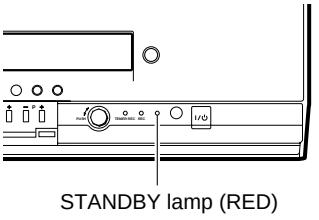
Diagnostic Item Description	No. of times STANDBY lamp flashes	Self-diagnostic display/Diagnostic result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F1701	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP) or overvoltage (OVP)	2 times	2 : 0 or 2 : 1 4 : 1] at the same time (Note 1)	• FBT • Q802 (H OUT) shorted	• On standby state. • Load on power line is shorted (at the same time 4 : 1 on display).
• Vertical deflection stopped	4 times	4 : 0 or 4 : 1	• IC501 • IC301 ⑭ pin • IC606 • Q802 (H OUT) shorted • Q803 • Q608 • R803 open	• Has entered standby state after horizontal raster. • Vertical deflection pulse is stopped. • Horizontal deflection stopped. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE)	5 times	5 : 0 or 5 : 1	• CRT • IC301 • Q701 - Q717 (CVM board) • G2 is improperly adjusted. (Note 2)	• No raster is generated. • CRT cathode current detection reference pulse output is small.

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.
The symptom that is diagnosed first by the microcontroller is displayed on the screen.
Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

• VCR EMG code List

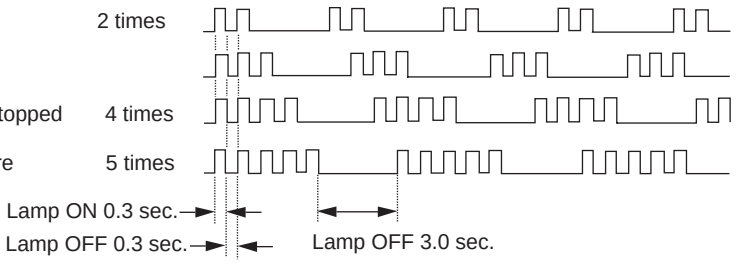
Code	Coutents	Code	Coutents
00h	NO EMG	30h	Capstan FG NG at initial
10h	CAM encode NG during unloading	31h	Capstan FG NG
11h	CAM encode NG during unloading	40h	Drum FG NG
12h	CAM encode NG at intial	41h	Drum FG NG at initial
20h	T reel NG during unloading	42h	Drum FG NG
21h	S reel FG NG	43h	Drum PG NG
22h	T reel FG NG	44h	Drum PG NG
23h	S reel FG NG	50h	DEW
24h	T reel FG NG at initial	60h	FL NG
25h	S reel FG NG at initial	70h	DEW eject NG

3. DISPLAY OF STANDBY LIGHT FLASH COUNT



* One flash count is not used for self-diagnostic.

< Diagnostic Item >	< Flash Count >
• +B OCP/OVP	2 times
• Vertical deflection stopped	4 times
• White balance failure	5 times



STOPPING THE STANDBY FLASH

• Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY lamp from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

• For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurances of failure for confirmation on the screen:

[To Bring Up Screen Test]

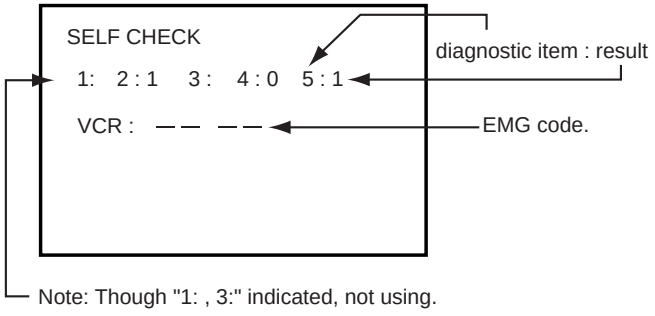
• In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display (i+) ➡ channel 5 ➡ Sound volume - ➡ Power ON ⏻

⇧

Note that this differs from entering the service mode (mode volume +).

Self-Diagnosis screen display



Numeral "0" means that no fault has been detected.

Numeral "1" means a fault has been detected.

Note: Though "1: , 3:" indicated, not using.

5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

• Since the diagnostic results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to “0”.

• Unless the result display is cleared to “0”, the self-diagnostic function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

• To clear the result display to “0”, press buttons on the remote commander sequentially as shown below when the diagnostic screen is being displayed.

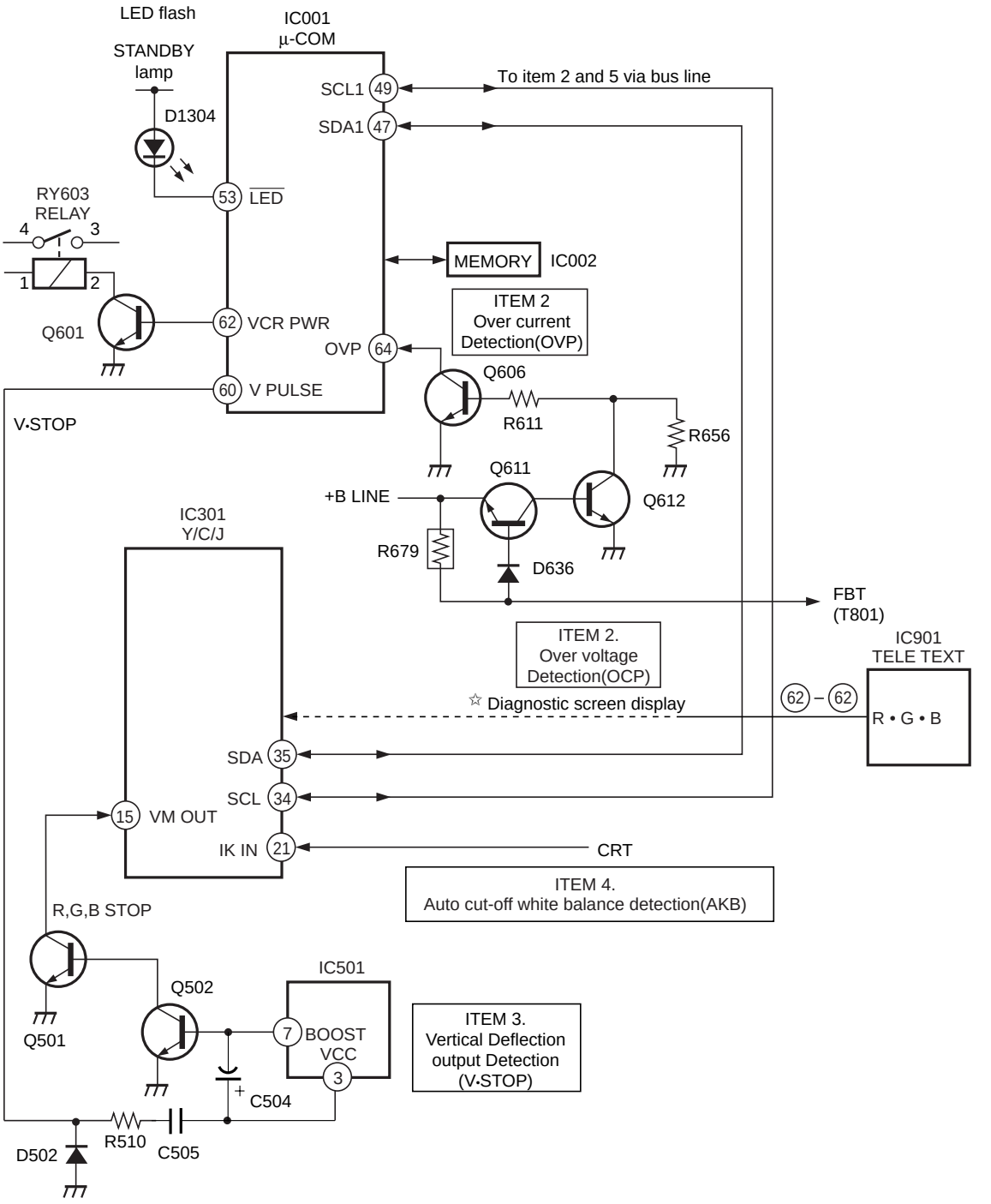
• Pay attention when perform by the service mode, other all electric adjustment data will be rewrite.

Channel 8 ➡ 0

[Quitting Self-diagnostic screen]

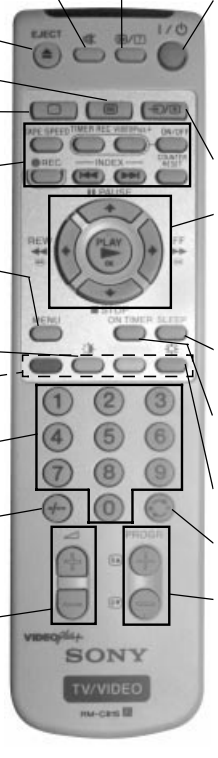
• To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSTIC CIRCUIT



+B overcurrent	Owing to current increase voltage of R679 decrease and that it make Q611 and Q612 to become LOW and OFF RY601.
+B over voltage	When +B voltage become more than 142.5V, Q611 and Q612 pin become LOW and RY601 OFF.
Vertical deflection stopped	Detect Vertical deflection Pulse lost by IC001 ⑥⓪ pin of micro computer. Mute the picture at ⑮ pin of IC301 that performed by Y/C/J.
White balance	Detect when R.G.B. output wrong level balance of automatic white balance detecting standard pulse which detect cathode current, or which become low almost.

Overview of Remote Control Buttons



Muting the Sound
Press to mute TV sound. Press again to restore the sound.

Displaying on Screen information
Press once to display On-Screen indications (first level).
Press twice to display On-Screen indications (second level)
Press a third time to cancel.

Ejecting a videotape
Press to eject the videotape

Temporally Switch Off the Video TV
Press to temporarily switch off the Video TV (the standby indicator ⏻ on TV lights up). Press again to switch on the Video TV from standby mode.

⚠ By using this button to turn off the Video TV instead of the Main Power on/off button, settings will not be cleared unless that the power is interrupted or you disconnect the AC power cord. In that case settings will be cleared after 7 days.

Selecting Teletext
Press to switch on teletext.

Selecting TV mode
Press to switch off teletext or video input.

Selecting input source
Press repeatedly until the desired input symbol of the source appears on the TV screen.

VCR Operation buttons
For details refer to "VCR Operation" section of this instruction manual.

- *When MENU is switched on:*
  Use these buttons to operate the menu system. For details refer to "Introducing and Using the Menu System" of this instruction manual (see page 7).
- *When MENU is switched off and a tape is inserted:*
  Use these buttons to operate VCR. For details refer to "Playing a Tape and Additional Tasks" section of this instruction manual (see page 10).

Displaying the menu system
Press to display the menu on the TV screen. Press again to remove the menu display from the TV screen.

Sleep Timer
For details refer to "Switching Off the Video TV Automatically (Sleep Timer)" section of this instruction manual (see page 9).

Selecting Picture mode
Press repeatedly to change the picture mode.

Fastext buttons
For details refer to "Teletext" section of this instruction manual.

On Timer
For details refer to "Switching On the Video TV Automatically (On Timer)" section of this instruction manual (see page 9).

Selecting channels
Press to select channels.

Selecting the TV Screen format
Press to view programmes in 16:9 mode. Press again to return to Normal (4:3) mode.

For double-digit programme numbers, e.g. 23, press -/-- first, then the buttons 2 and 3. If you enter an incorrect first digit, this should be corrected by entering another digit (0-9) and then selecting -/-- button again to enter the programme number of your choice.

Back to the channel last watched
Press to watch the last channel selected (watched for at least 5 seconds).

Selecting channels
Press to select the next or previous channel.

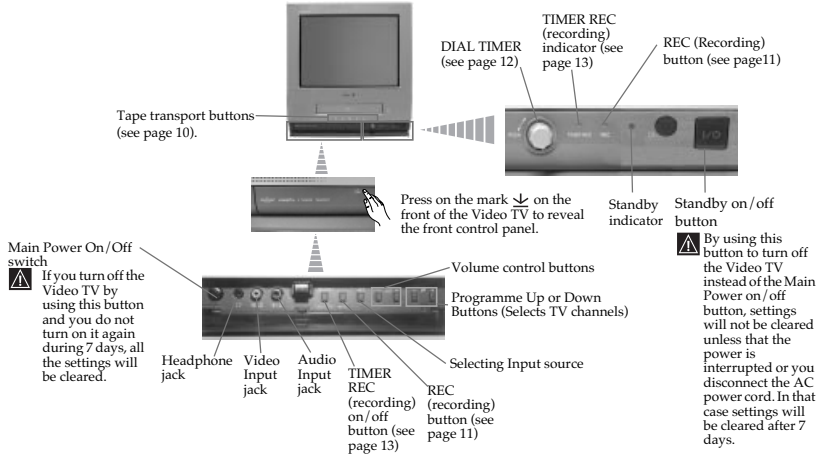
Adjusting TV volume
Press to adjust the volume of the TV.

ⓘ Besides TV functions, all buttons with green symbols are also used for Teletext operation. For more details, please refer to ""Teletext" section of this instruction manual (see page 18).

SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

Overview of Video TV Buttons


DIAL TIMER (see page 12)
TIMER REC (recording) indicator (see page 13)
REC (Recording) button (see page11)
Tape transport buttons (see page 10).
Press on the mark ⇩ on the front of the Video TV to reveal the front control panel.
Standby indicator
Standby on/off button
By using this button to turn off the Video TV instead of the Main Power on/off button, settings will not be cleared unless that the power is interrupted or you disconnect the AC power cord. In that case settings will be cleared after 7 days.
Main Power On/Off switch
If you turn off the Video TV by using this button and you do not turn on it again during 7 days, all the settings will be cleared.
Volume control buttons
Programme Up or Down Buttons (Selects TV channels)
Selecting Input source
Headphone jack
Video Input jack
Audio Input jack
TIMER REC (recording) on/off button (see page 13)
REC (recording) button (see page 11)

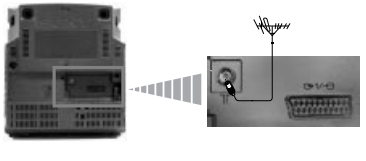
GB

Inserting Batteries into the Remote Control

⚠ Make sure to insert the supplied batteries using the correct polarities.
Always remember you dispose of used batteries in an environmental friendly way.

Connecting the Aerial

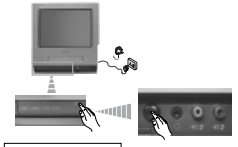
ⓘ Connecting cables are not supplied.



Switching On the Video TV and Automatically Tuning

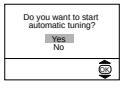
The first time you switch on your TV, a sequence of menu screen appear on the TV enabling you to: 1) choose the language of the menu screen, 2) search and store all available channels (TV Broadcast), 3) change the order in which the channels (TV Broadcast) appear on the screen and 4) confirm the clock setting.
However, if you need to change any of these settings, you can do that by selecting the appropriate menu in the (Set Up).

1 Connect the TV plug to the mains socket (220-240V AC, 50Hz)
Press the main on/off button on the TV set to turn on the Video TV.
The first time you press this button, a Language menu displays automatically on the TV screen.

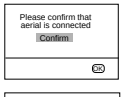


2 Press the or button on the remote control to select the language, then press the **OK** button to confirm your selection. From now on all the menus will appear in the selected language.

3 The **Auto Tuning** menu appears on the screen. Press the **OK** button to select **Yes**.

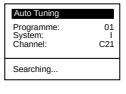


4 A new menu appears on the screen asking you to check that the aerial is connected. Ensure the aerial is connected and then press the **OK** button.



The Video TV starts to automatically search and store all available channels (TV Broadcast) for you.

This procedure could take some minutes. Please be patient and do not press any button. Otherwise the automatic tuning will not be completed.



5 After all available channels are captioned and stored, the **Programme Sorting** menu appears automatically on the screen enabling you to change the order in which the channels appear on the screen.

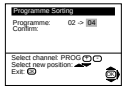
a) If you do not wish to change the channel order, press **OK** and go to step 6.

b) If you wish to change the channel order:

1 Press the **PROGR +** or **-** button to select the programme number with the channel (TV Broadcast) you wish to rearrange appears on the screen.

2 Press the or button to select the new programme number position for your selected channel (TV Broadcast), then press the **OK** button.

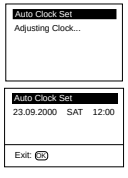
The word **Confirm** is highlighted for a few seconds to confirm that the new programme position is stored.



3 Repeat steps b)1 and b)2 if you wish to change the order of the other channels.

4 When you finish to rearrange the order of the channels, press **OK**.

6 The Video TV adjusts itself automatically clock setting, and after few seconds date and time settings are displayed.
If you want to change the time settings, you can adjust it manually through the menu system (for details, see "Setting the Clock Manually" section of this instruction manual (see page 7).



7 Press the **MENU** button to remove the menu from the screen.

Your Video TV is now ready for use

Introducing and Using the Menu System

Your Video TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the Remote Control to operate the menu system:

1 Press the **MENU** button to switch the first level menu on.

2 • To highlight the desired menu or option, press or .
- To enter to the selected menu or option, press .
- To return to the last menu or option, press .
- To alter settings of your selected option, press / / or .
- To confirm and store your selection, press **OK**.

3 Press the **MENU** button to remove the menu from the screen.

Picture Adjustment

The "Picture Adjustment" menu allows you to alter the picture adjustments.

To do that: by using the menu system and after selecting the item you want to alter press , then press repeatedly / / or to adjust it and finally press **OK** to store the new adjustment.
This menu also allows you to customise the picture mode based on the programme you are watching:

Live (for live broadcast programmes).
Movie (for films).
Personal (for individual settings).

- ***Brightness, Colour*** *and* ***Sharpness*** *can only be alterated if "Personal" mode is selected.*
- ***Hue*** *is only available for NTSC colour signal (e.g: USA video tapes).*
- *Select* ***Reset*** *and press* ***OK*** *to reset the picture to the factory preset levels.*

GB

Setting The Clock Manually

The "Clock" option in the "Timer" menu allows you to set manually the clock whilst you are in TV mode.

To do that: by using the menu system and after selecting the option press , then :

1 With **Auto Adjust** highlighted, press and next press or to select **Off**. Next press **OK**.

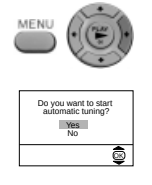
2 Select **Manual Adjust** and press . With the day column highlighted, press or to set the date, then press and proceed in the same way to set the month, year, hour and minutes. Finally press **OK**.

- *It is important you to set correctly the clock to use Timer Recording, Quick-Timer recording and On Timer functions.*
- *If power is interrupted or you turn off the Video TV by using the main On/off power switch or you disconnect the AC power cord, after 7 days will cause these settings to be cleared.*
- *To automatically set the clock, and whilst you are in TV mode select "Auto Adjust" "On" in the step above and in the "Programme" option select the from which programme number you want to get the time.*
- *Because the Video TV gets clock settings from teletext signals (sent by broadcasters), even you have selected Auto Adjust "On", we recommend you to check after summertime and wintertime that clock settings are correct, if not adjust it manually.*

Automatically Tuning The Video TV

The "Auto Tuning" option in the "TV Set Up" menu allows you to automatically search for and store all available TV channels.

To do that: by using the menu system and after selecting the option, press and then proceed in the same way as in the section "Switching On the Video TV and Automatically Tuning". (see page 6, steps 3 and 4).



Changing The Programme Order Of The TV Channels

The "Programme Sorting" option in the "TV Set Up" menu allows you to change the order in which the channels (TV Broadcast) appear on the screen.

To do that: by using the menu system and after selecting the option, press ▶ and then proceed in the same way as in the section "Switching On the Video TV and Automatically Tuning" (see step 5b) on page 6).

Manually Tuning The TV

The "Manual Programme Preset" option in the "TV Set Up" menu allows you to preset channels one by one to the programme order of your choice. To do that:

1. By using the menu system and after selecting the "Manual Programme Preset" option, press ▶. Then with **Programme** option highlighted press ▶. Press ▼ or ▲ to select on which programme number you want to preset the channel. Then press ◀.
2. After selecting the **Channel** option, press ▶. Then press ▼ or ▲ to select the channel tuning ("C" for terrestrial channels or "S" for cable channels). Next press ▶. After that, press the number buttons to enter directly the channel number of the TV Broadcast. If you do not know the channel number, press ▼ or ▲ to search for it. When you tune the desired channel, press **OK** twice to store.

- *Repeat all the above steps to tune and store more channels.*

Fine Tuning Channels

Normally the Automatic Fine Tuning (AFT) is operating, however by using the "Manual Programme Preset" option in the "TV Set Up" menu you can manually fine tune the Video TV to obtain a better picture reception in the case that the picture is distorted.

To do that: while watching the channel (TV Broadcast) you wish to fine tune, and by using the menu system select the "Manual Programme Preset" option. Press ▶. With the **AFT** option highlighted, press ▶. Next press ▼ or ▲ to adjust the fine tuning between -15 and +15. Finally press **OK** twice to store.

Skipping Programme Positions

The "Manual Programme Preset" option in the "TV Set Up" menu allows you to skip any unwanted programme numbers when they are selected with the PROGR +/- buttons.

To do that: by using the menu system and after selecting the "Manual Programme Preset" option, press ▶. Then with the **Programme** option highlighted press ▶. Next, press ▼ or ▲ to select the programme number you want to skip. Press ◀. Then, select the **Skip** option and press ▶. Next press ▼ or ▲ to select **Yes**. Finally press **OK** twice to confirm and store.

- *To cancel this function afterwards, select "No" instead of "Yes" in the step above.*

Setting Pay-TV Channels

The "Manual Programme Preset" option in the "TV Set Up" menu allows you to watch Pay-TV channels by connecting a Pay-TV decoder to the Scart connector ⇨1/⇦ placed on the rear of the Video TV.

To do that: by using the menu system and after selecting the "Manual Programme Preset" option, press ▶. Then with the **Programme** option highlighted, press ▶. Next press ▼ or ▲ to select the programme number with the scrambled channel and press ◀. Select the **Decoder** option and press ▶. Next press ▼ or ▲ to select **On**. Finally, press **OK** twice to confirm and store.

- *While you are recording a programme which is being recorded through the Pay-TV decoder, you will not be able to view other programmes through the decoder.*

Selecting The Language Of The Menu Screens

The "Language" option in the "Set Up" menu allows you to select the language that the menus are displayed in.

To do that: by using the menu system and after selecting the option, press ▶ and then proceed in the same way as in the section "Switching On the TV and Automatically Tuning" (see page 6, step 2).

Locking The Video TV

The "Parental Lock" option in the "Set Up" menu allows you to lock the buttons of the Video TV set. In this way, after this option is selected and the Video TV set is switched off, the buttons on the Video TV only works by using the remote control buttons.

To do that: by using the menu system and after selecting the option, press ▶. Then press ▼ or ▲ to select **On**. Press **OK** to confirm and store and finally press I/⏻.

- *To cancel this function afterwards, select "Off" instead of "On" in the step above.*
- *If you have locked your Video TV and the remote commander is lost, press the I/⏻ button (during more than 5 seconds) on the set to operate it.*

Adjusting The Picture Rotation
(only for KV-21FV1U)

Because of the earth's magnetism, the picture might be slant. In this case, you can correct the pictures slant by using the option "Picture Rotation" in the "Set Up" menu.

To do that: by using the menu system and after selecting the option, press ▶. Then press ▼ or ▲ to correct any slant of the picture between -5 and +5 and finally press **OK** to store.

Switching On The Video TV Automatically (On Timer)

The "On Timer" option in the "Timer" menu allows you to preset your Video TV to automatically switch on at a desired time. You can select the TV programme or video playback to be switched automatically on from standby mode.

To do that: by using the menu system and after selecting the option press ▶,

1. With **Time** option highlighted, press ▶. Press ▼ or ▲ to set the on-time hour then press ▶. Proceed in the same way to set the minutes and press **OK**.
2. With **Source** option highlighted, press ▶. Then press ▼ or ▲ to select the source to be switched on ("**TV**" or "**VCR**"). If you select "TV", press ▶ and then press ▼ or ▲ to select the programme number you want the Video TV turns on. Press **OK**.
3. With **On Timer** option highlighted, press ▶ and then press ▼ or ▲ to select **On**. Press **OK**.
4. Finally press the standby button I/⏻. At the selected time, the Video TV switches on automatically.

- *Any loss of power will cause these settings to be cleared.*
- *By pressing the ON TIMER button on the remote control you can set on/off the On Timer, but it is not possible to change the time and programme settings.*

Switching Off The Video TV Automatically (Sleep Timer)

You can automatically switch the video TV into standby mode after a selected time period.

To do that: Press the **SLEEP** button on the remote control repeatedly to set the time period delay (OFF, 30, 60 or 90 minutes).

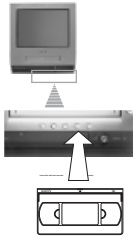
- *While watching the TV, you can press the ⊞/? button on the remote control to display the time remaining.*
- *One minute before the Video TV switches itself into standby mode, a good night message will be displayed on the screen.*
- *To cancel this function afterwards, select "Off" in the step above.*

GB

Playing a tape

1 Insert a cassette with the arrow indication ▲ facing upwards.
•If you insert a cassette with its safety tab removed, playback starts automatically.

2 Press **PLAY** ▶ and the playback starts. On Screen information is displayed for a few seconds.



Additional Tasks

You can operate all the video tasks by using the remote control buttons or the Video TV buttons.

To stop playback

Press **STOP** ■ and the Video TV returns to the normal TV picture.

To stop playback for a moment

Press **PAUSE** ❚❚. Press it again or press to resume playback.

¥ If you leave your Video TV in pause mode, normal playback resumes after about 5 minutes.

To fast forward or rewind the tape

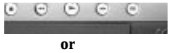
Press **STOP** ■, then press **FF** ▶▶ to fast forward or press **REW** ◀◀.

To view the picture in fast forward or rewind mode

Press and hold **FF** ▶▶ during fast forward or **REW** ◀◀ during rewind. While you hold the button, you can view the picture.

When you release the button, fast forward or rewind mode is resumed.

If you use the buttons on the remote commander, press **FF** ▶▶ or **REW**◀◀ once and will not be necessary to hold the button. In this case to resume normal playback, press **PLAY** ▶.



or

To search a tape at high speed

During playback, press and hold **REW** ◀◀ (rewind) or **FF** ▶▶ (fast forward). A high speed picture appears on the TV screen.

¥ To resume normal playback, release the button.

To eject a cassette

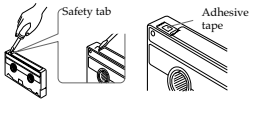
Press **EJECT** ⏏.

¥ You can eject the cassette even if the power is in standby mode.

Protecting your cassette against accidental erasure

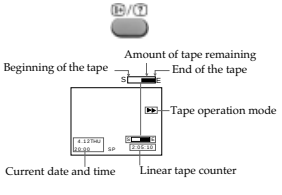
To prevent accidental erasure, break off the safety tab as illustrated.

¥ To record on a cassette without a safety tab, simply cover the tab hole with adhesive tape.



Displaying On-Screen Information

In Play mode, press the ⊡/? button to display the following on-screen information. To show only the amount of remaining tape and the linear tape counter on the screen, press ⊡/? again.
To make the information disappear, press ⊡/? repeatedly until no information is displayed on the screen.



Resetting the tape counter

The tape counter helps you to locate a certain scene after playback.
Press the **COUNTER RESET** button on the remote control to set the counter to "00:00:00" before playing the tape. The tape counter is automatically reset to zero whenever a cassette is inserted. The Video TV keeps counting the length of the tape being played. Note, however, that the tape counter does not count the portions without video signals recorded.

Recording TV programmes

1 In standby mode, press the standby button I/⏻ to turn on the Video TV.

2 Insert a cassette with a safety tab.

3 Press **PROGR +** or **–**, or the number buttons to select the programme number.

4 Press **TAPE SPEED** to select the recording speed: **SP** for Standard Play or **LP** for Long Play.

• In the SP mode, the tape runs twice as fast as the LP mode. It means that in LP mode you can record double time than in SP mode.

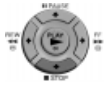
5 Press **REC** ●.

The REC indicator on the front of the Video TV lights up and recording begins.

To stop recording

Press **STOP** ■.

• When the tape reaches the end, the Video TV rewinds the tape automatically to the beginning, then stops. This function does not work when the power of the Video TV is off.

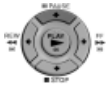


To pause recording

You can cut out an unwanted scene during recording with this button.

1 Press **PAUSE** ❚❚ when an unwanted scene appears on the screen, then recording pauses.
2 Press **PAUSE** ❚❚ again to release the pause mode at the desired scene, then recording resumes from the point set in step 1.

• When the recording pause mode lasts for about 5 minutes, the Video TV stops recording to prevent tape damage.



Continues Recording with the TV off

Whilst you are recording, press I/⏻. The Video TV is turned off. However, recording continues and the REC indicator on the Video TV lights up.

GB

Recording TV programmes using DIAL-TIMER

The Dial-Timer recording function allows you to preset your Video TV to record one programme within a 24 hour period. for setting the Dial-Timer, use DIAL TIMER button on the Video TV.

Before you begin:

- Make sure that the clock is set correctly. If it is not, refer to the "Setting the Clock Manually" section of this instruction manual (see page 7).
- Make sure that the loaded cassette has its safety tab intact.
- Make sure that the Video TV does not enter the timer recording standby mode (the TIMER REC indicator on the Video TV should not be lit).

1 In standby mode, press the standby button I/⏻ to turn on the Video TV.

2 Press **DIAL TIMER**. The "Dial Timer" menu appears on the screen.

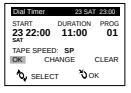
3 Turn **DIAL TIMER** to set the hour of the start time, then press **DIAL TIMER** to confirm.

4 Proceed in the same way as in step 3 to set the minutes of the recording start time, the recording time period and programme number to be recorded.

- *The hour increases or decreases by one hour.*
- *The minutes increase or decrease by one minute.*
- *The recording time period increases or decreases by 15 minutes.*
- *The programme position changes as follows*

0 <—> 1 <—> 2... <—> 99 <—> L1 <—> L 2 <—> 0 <—>1

- *L1 is used for the equipment connected to the Scart connector ⇨1/⇦ placed on the rear of the Video TV.*
- *L2 is used for the equipment connected to the front connectors ⇦ and ⇦ .*



5 With **TAPE SPEED** highlighted, turn the **DIAL TIMER** to select the recording speed: **SP** for Standard Play or **LP** for Long Play, then press the **DIAL TIMER**.

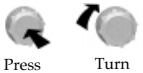
- *In LP mode you can record double time than in SP mode.*

6 Turn **DIAL TIMER** to move the cursor to **OK**, then press **DIAL TIMER** to confirm all the settings.

- *If a warning message appear on the screen, the recording is cancelled and after proceed according the necessities, you must re-enter again the Dial timer settings.*

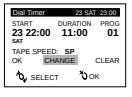
The Dial Timer indicator on the Video TV lights up and the Video TV enters into the timer recording standby mode.

Changing or Cancelling the Dial Timer settings



1 Press **DIAL TIMER**.
The Dial Timer menu appears on the screen.

2 Turn **DIAL TIMER** to **CHANGE** (to change the recording settings) or to **CLEAR** (to clear the recording settings) and press **DIAL TIMER**.



3 **a)** If you have selected **CLEAR**, press **DIAL TIMER** and all the settings will be cleared.
b) If you have selected **CHANGE**, you can change all the settings by following steps from 2 to 5 of the above section "Recording TV Programmes using DIAL TIMER".

Recording TV Programmes Using the Timer

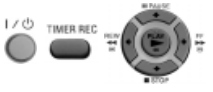
This function allows you to preset your Video TV to record up to 5 programmes within a one-month period.

Before you begin:

- Make sure that the clock is set correctly. if it is not, please refer to the section "Setting the Clock Manually"(see page 7).
- Make sure that the loaded cassette has its safety tab intact.

Setting the Timer

1 In standby mode, press the standby button I/⏻ to turn on the Video TV.



2 Press the **TIMER REC** button to display the Programme List menu.

3 Press 🡻 or 🡹 repeatedly to set the date (for daily and weekly recording, refer to the section "Daily/Weekly Recording" below), then press 🡺 .

4 Proceed in the same way as in step 3 to set recording start time, recording stop time, programme number, tape speed (SP or LP) and VPS/PDC "On" or "Off".

If you have made a mistake during timer setting, press 🡸 to return to the previous position and correct the setting.

- **Date:**
  Daily/Weekly Recording
  You can preset your Video TV to record the same programme every day of the week (daily recording) or the same programme on the same day every week (weekly recording).
  Whilst you are in DATE position, with each press of 🡻, the setting changes as follows:
  23 SAT (today) —> MON-SUN —> MON-SAT —> MON-FRI —> SAT (means every Saturday...) —> FRI —> SUN —> 22 (next month).—>...
- **Time:**
  - *The hour increases or decreases by one hour.*
  - *The minutes increase or decrease by one minute.*
- **Programme number:**
  - The programme position changes as follows:
    0 <—> 1 <—> 2... <—> 99 <—> L1 <—> L 2 <—> 0 <—>1
  - L1 is used for the equipment connected to the Scart connector ⇨1/⇦ placed on the rear of the Video TV.
  - L2 is used for the equipment connected to the front connectors ⇦ and ⇦ .
- **Tape Speed:**
  - In "LP" mode you can record double than in SP mode
- **VPS/PDC:**
  - For details refer to "Timer recording with VPS/PDC signals" section of this instruction manual (see page 14).

5 Press **OK**.

6 If you want to set more programmes, press 🡸 or 🡺 to move the cursor to **ADD** and then press **OK**. Repeat steps from 3 to 5.

7 After setting all your desired programmes press 🡸 or 🡺 and highlighting **OK**, press the **OK** button to confirm your settings.

The TIMER REC indicator on the Video TV lights up and the Video TV enters into timer recording standby mode.

To Stop Timer Recording

Press the **ON/OFF** button on the remote control. Then the TIMER REC indicator on the Video TV turns off.

Using the Video TV before Timer Recording starts

You can watch a TV programme, check the timer settings and reset the counter in timer recording standby mode. However, if you want to eject the cassette, use the tape operation buttons, change or cancel the timer settings, you have to press the **ON/OFF** button on the remote control to turn off the TIMER REC indicator on the Video TV set.

Remember to press again the **ON/OFF** button to make the TIMER REC indicator lights up again and the set comes back into the timer recording standby mode.

GB

Timer recording with VPS/PDC signals

Some broadcasting system transmits VPS (Video Programme System) signals or PDC (Programme Delivery Control) signals with the TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording stops. As soon as the interrupted programme resumes, recording starts again. To do that:

1 When you set a programme to be recorded by using the timer, (refer to the "Setting the Timer" section on page 13), set **VPS/PDC** to **On**.

- *If recording times overlap due to a VPS/PDC time shift, the programme that was broadcast first has priority. Recording of the second programme begins when the first programme has finished.*
- *If the Video TV could not receive VPS/PDC signal because it was too weak or because the station failed to transmit VPS/PDC signals, timer recording is made without the VPS/PDC function.*

Recording TV Programmes Using VideoPlus+ *

* *VideoPlus+ is a trademark applied for by Gemstar Development Corp. VideoPlus+ system is manufactured under license from Gemstar Development Corporation.*

The VideoPlus+ function allows you to simplify the task of making timer recordings. Using VideoPlus+, you can make all the necessary settings by just entering the desired programme's 9-digit code, which is available in your local programme guide.

Before you begin:

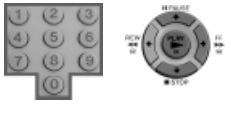
- Make sure that the loaded cassette has its safety tab.

1 In standby mode, press the standby button I/⏻ to turn on the Video TV.

2 Press the **VIDEOPLUS+** button to display the VideoPlus+ menu.

3 Press the number buttons to enter the desired programme's VideoPlus+ number and press **OK**.

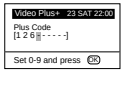
- *If you have made a mistake, press ← and re-enter the correct number.*



4 On the screen appears automatically date and time recording settings. With **PROG** column highlighted, press ↓ or ↑ to select the correct programme number and then press →.

5 Press ↓ or ↑ to select the recording speed: **SP** or **LP**. Then press →.

- *In LP mode you can record double time than in SP mode.*



6 Highlighting the **VPS/PDC** column, press ↓ or ↑ to select **On** or **Off**. (for details, refer to "Timer recording with VPS/PDC signals" section above). Then press →.

7 The Programme List menu appears on the screen. If recording settings are correct, highlighting **OK**, press the **OK** button to confirm.

8 If you want to check, add, change or cancel your settings please refer to the "Checking/Adding/Changing/Cancelling the Timer Settings" section (see page 15).

The TIMER REC indicator on the front of the Video TV lights up and the set enters into timer recording standby mode.

Guide Channels for VideoPlus+

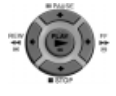
Guide channel	Station name	Guide channel	Station name
001	BBC1	123	UK GOLD
002	BBC2	124	DISCOVERY
003	ITV		THE LEARNING CHANNEL
004	CHANNEL 4	125	BRAVO
005	RTE (IRELAND)		ADULT CHANNEL
006	NETWORK 2 (IRELAND)	126	CNN
101	SKY ONE	127	EURONEWS
102	SKY NEWS	129	QVC
103	SKY MOVIES	130	UK LIVING
104	THE MOVIE CHANNEL		TV-X
105	SKY SPORT	131	RAI 1
106	NICKELODEON	132	RAI 2
	VH-1 GERMANY	133	TV5 EUROPE
107	EUROSPORT	134	TVE INTERNATIONAL
108	GALAVISION	135	MBC/ARABIC
109	MTV EUROPE	136	VTM
110	CHILDREN'S CHANNEL	137	SPORTNET
	THE FAMILY CHANNEL	138	COUNTRY MUSIC TV
111	SKY MOVIES GOLD	139	VIDEO HITS ONE
112	BBC WORLD SERVICE		VH-1
113	RTL 4	140	SKY SPORT 2 &
114	SUPER SPORT		SOAPS & TRAVEL
	FILMNET 2	141	TV ASIA
	FILMNET +	142	LA-5
115	RTL PLUS INTERNATIONAL	143	LIVE TV
116	SAT 1	144	SUPERCHANNEL
117	PREMIERE	145	JAPAN TV
118	3 SAT	146	SELECT TV
119	ARD	147	MOVIE CHANNEL
120	PRO 7		FILMNET 1
121	TELE 5	148	SKY SPORT 3
122	TELECLUB	149	TNT
			CARTOON NETWORK

Checking/Adding/Changing/Cancelling the Timer Settings

GB

1 Press the **TIMER REC** button on the remote control to display the list of the timer settings that you preset. If you just want to check the list, go to step 4. If you want to add, change or clear any setting, please follow all the steps below.

2 Press → or ← repeatedly to select **ADD, CHANGE** or **CLEAR** and press **OK**.



3 **a)** To add new settings:
Repeat steps from 3 to 7 of the section "Setting the Timer" (see page 13).

b) To change the settings:
Press ↓ or ↑ repeatedly to move the cursor to the setting you want to change, then press **OK**. Finally repeat steps from 3 to 7 of the section "Setting the Timer" (see page 13).

If you notice you have overlapped timer settings, you can correct the settings as mentioned above. Otherwise, the second programme starts recording only after the first programme has finished.

c) To clear the settings:
Press ↓ or ↑ repeatedly to move the cursor to the setting you want to delete, then press **OK**. The setting is cleared and "--" appears.

4 When you finish adding, changing or cancelling the settings, press ↓ or ↑ to select **OK** and then press the **OK** button.

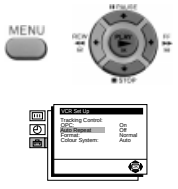
If there are other timer setting on the list, the Video TV enters the timer recording standby mode and the TIMER REC indicator on the Video TV set lights up.

Playing a Tape Repeatedly

The "Auto Repeat " option in the "VCR Set Up" menu allows you to play a recorded tape repeatedly.

To do that: by using the menu system and after selecting the option, press . Then press or to select **On**. Finally press **PLAY** ▶ to start the playback. When the tape reaches its end, the video TV rewinds the tape to the beginning and then, plays it again.

• *To cancel this function afterwards, select "Off" instead of "On" in the step above.*



Searching Using the Index Function

The Video TV marks the tape with an index signal at the point where each recording begins. These signals can be used to find a specific recording. this Video TV can search up to 99 index signals ahead of or behind the current position.

To do that:

1 Insert a tape.

2 Press **INDEX** ⏮ or ⏭ repeatedly to specify how many index signals ahead or behind you want to search in relation to the current tape position. The Video TV begins searching for the selected index. When the index is reached, playback begins automatically.

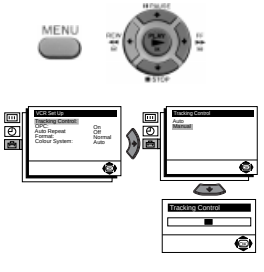
• *You can stop searching by pressing STOP* ■.

Adjusting the Tracking

The tracking condition is automatically adjusted on this Video TV. The AUTO TRACKING message appears while the Video TV is searching for the best tracking condition.
However, if streak or snow noise appear on the video playback, you can adjust the tracking condition manually by using the "Tracking Control" menu in the "VCR Set Up" menu.

To do that: Whilst you are in play mode and by using the menu system, select the **Tracking Control** menu and press . Press or to select **Manual** and press . When the tracking meter appears on the screen press or to reduce the picture noise and get the best picture noise. Finally press **OK**.

• *To cancel this function afterwards, select again "Auto" instead of "Manual" in the step above.*



Adjusting the Picture with the Optimum Picture Control (OPC)

The "OPC" option in the "VCR Set Up" menu allows you to improve playback and recording quality by adjusting the system parameter automatically according to the condition of the video tape. The OPC function works on all types of tapes, even on rental tapes. This function is set to "On" at the factory. To maintain better picture quality, we recommend to leave the function on.

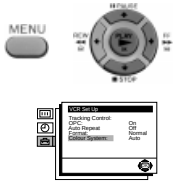
To do that: Whilst you are in play mode and by using the menu system, select the **OPC** option and press . Then press or to select **On** or **Off**. Finally press **OK**.

Setting the Colour System

The colour system is set in "Auto" condition. However, by using the "Colour System Option" in the "VCR Set Up" menu allows you to, set the colour system to the corresponding system that the tape was recorded in the case that you notice streaks appearing on the screen during playback

To do that: Whilst you are in play mode and by using the menu system, select the **Colour System** option and press . Then press or to select the corresponding colour system (**Auto, MESECAM, PAL** or **NTSC**). Finally, press **OK**.

• *To cancel this function afterwards, select again "Auto" in the step above.*

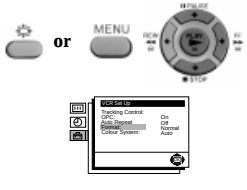


Viewing Programmes in 16:9 Mode

When viewing recording of programmes which were originally broadcast in 16:9 mode, you can set your Video TV to 16:9 mode to prevent a distorted picture.

To do that: : Press repeatedly the button on the remote control to select 16:9 or Normal (4:3 format). You can also do it, by using the menu system. In that case, select the **Format** option in the "VCR Set Up" menu and press . Then press or to select **16:9** or **Normal**. Finally, press **OK**.

• *When you change channels, switch between input sources or turn the power on and off, the Video TV will switch back to normal mode.*



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When Connecting to a Sony VCR

If you use this Video TV with another Sony VCR, the remote control may accidentally operate both the Video TV and VCR at the same time. The **VHS** option in the "Set Up" menu allows you that the remote control operates only this Video TV.

To do that: by using the menu system and after selecting the **VHS** option, press . Then press or to select **Sony**. Finally, press **OK**.

• *To cancel this function afterwards, select "Others" in the step above.*

Teletext

Teletext is an information service transmitted by most TV stations. The index page of the teletext service (usually page 100) gives you information on how to use the service. To operate teletext, use the remote control buttons as indicated below.

Make sure to use a channel (TV Broadcast) with a strong signal, otherwise teletext errors may occur.

To Switch On Teletext:
After select the channel (TV Broadcast) which carries the teletext you wish to view, press ☰.

To Select a Teletext page:
Input 3 digits for the page number, using the numbered buttons.
- *If you have made a mistake, retype the correct page number.*
- *If the counter on the screen continues searching, it is because this page is not available. In that case, input another page number.*

To access the next or preceding page:
Press PROGR + (▲) o PROGR - (▼).

To superimpose teletext on to the TV:
Whilst you are viewing teletext, press ☰. Press it again to cancel teletext mode.

To freeze a teletext page:
Some teletext pages have sub-pages which follow on automatically. To stop them, press ⏪ / ⏩.
Press it again to cancel the freeze.

To reveal concealed information (e.g: answer to a quiz):
Press ⏩ / ❓. Press it again to conceal the information.

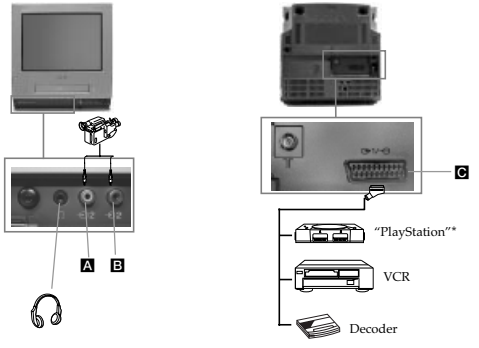
To Switch Off Teletext:
Press ▢.

Fastext

Fastext service lets you access pages with one button push.
While you are in Teletext mode and Fastext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the colour button (red, green, yellow or blue) to access the corresponding page.

Connecting Optional Equipment

Using the following instructions, you can connect a wide range of optional equipment to your Video TV set. (Connecting cables are not supplied).



* "**PlayStation**" is a product of Sony Computer Entertainment, Inc.
* "**PlayStation**" is a trademark of Sony Computer Entertainment, Inc.

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Using Optional Equipment

In order to get the input signal of a connected equipment onto the TV screen, you need to select the symbol of the connector to which you have connected the device.
e.g.: You have connected a "PlayStation" to the connector with the symbol ⇨1 / ⇢. Press the button ⇨ on the remote control repeatedly until you see the symbol ⇨1 on the screen.

1 Connect your equipment to the designated Video TV socket, as indicated above.

2 To watch the picture of the connected equipment, press the ⇨ button repeatedly until the correct input symbol appears on the screen.

Symbol	Input Signals
⇨1	• Audio / video input signal through the Scart connector **C**.
⇢	• RGB input signal through the Scart connector **C**.
⇨2	• Video and audio input signals through the phono sockets **A** and **B**.

3 Switch on the connected equipment.

4 Press ▢ button on the remote control to return to the normal TV picture.

Editing with another VCR

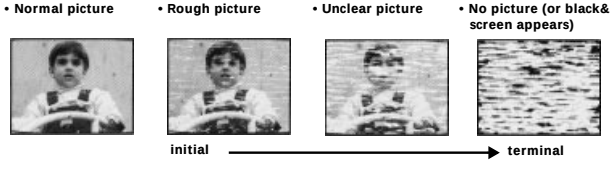
Using an additional VCR and connecting as it is in the section above "Connecting Optional Equipment", you can edit a tape.

Video Head Cleaning

Even the Auto Head Cleaner built into this set automatically cleans the video heads when a cassette is loaded or unloaded. However, if the playback pictures are noisy and hardly visible or no picture appears, video heads probably need an extra cleaning. In this case, clean the video heads using the V-25CL video head cleaning tape (not supplied) or ask Sony service personnel to clean the video heads.

Do not use a commercially available wet-type cleaning tape, as it may damage the video heads.

Symptoms caused by contaminated video heads



Worn Video heads

If your Video TV displays a poor picture after you clean the video heads, you may need to replace them. Consult your dealer or the Sony Service Centre nearest you.

Check the video heads after 1,000 hours of use

A Video TV is a high precision machine. It must record on or play from magnetic tapes on which the image signals from the colour TV or the video camcorder are recorded.
The video heads or mechanical parts for transporting the tape are contaminated or worn after extended use. You should have your Video TV checked after each 1,000 hours of use.

Troubleshooting

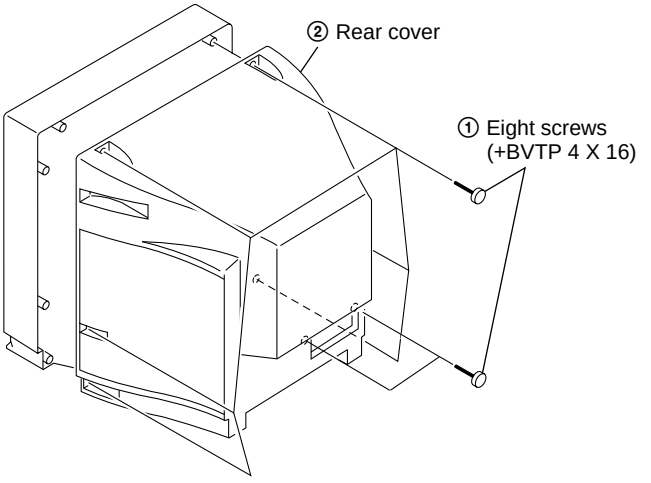
If you have any problems while viewing your Video TV, please check the following troubleshooting guide. If the problem persists, contact your Sony dealer.

Problem	Solution
TV Section	
No picture (screen is dark) and no sound.	• Check the aerial connection. • Plug the Video TV in and press the ⏻ button on the front of TV or if the standby indicator ⏻ is on, press I/⏻ button.
Poor or no picture (screen is dark), but good sound.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to the factory settings.
No picture when watching equipment connected to the Scart connector.	• Check that the optional equipment is on and press the ⏎ button repeatedly on the remote control until the correct input symbol is displayed on the screen.
Good picture, no sound.	• Press the ◿ +/- button on the remote control.
No colour on colour programmes.	• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to factory settings.
Distorted picture when changing programmes or selecting teletext.	• Turn off any equipment connected to the Scart connector on the rear of the TV.
Picture slanted (only for KV-21FV1U).	• Using the menu system, select the "Picture Rotation" option in the "Set Up" menu to correct the picture slant.
Noisy picture when viewing a TV channel.	• Using the menu system, select the "Manual Programme Preset" menu and adjust Fine Tuning (AFT) to obtain better picture reception.
Clock section	
The clock has stopped and "--:--" is displayed.	• Reset the clock and timer settings. for details refer to the section "Setting the Clock Manually" (see page 7).
Playback section	
Power is on, but the tape does not run.	• Switch off, disconnect the AC power cord and leave the set for about one minute.
Poor playback picture.	• Using the menu system, select the "VCR Set Up" menu and check the "Colour System" option. • Adjust the tracking manually. For details refer to the section "Adjusting the Tracking" (see page 16). • Clean the video heads. For details refer to the section "Video Head Cleaning" (see page 20). • Use a new tape.
The sound drops out.	• Use a new tape.
Recording section	
The cassette is ejected when you press REC ●.	• Cover the safety tab hole. For details refer to the section " "Protecting your cassette against accidental erasure" (see page 10).
Cannot record.	• Insert a cassette with its safety tab intact. • Rewind the tape.
Timer recording section	
Cannot program a recording using the timer.	• Set the current time and date. For details refer to the section "Setting Clock Manually" (see page 7).
The cassette is ejected when you press TIMER REC ON/OFF.	• Cover the safety tab hole. For details refer to the section " "Protecting your cassette against accidental erasure" (see page 10).
The TIMER REC indicator on the front of the Video TV does not light up even though you press TIMER REC ON/OFF.	• Insert a cassette with its safety tab intact. • Rewind the tape. • Check the settings for timer recording. For details refer to the section "Checking/Adding/Changing/Cancelling the Timer Settings" (see page 15).
Others	
A cassette cannot be inserted.	• Press EJECT ⏏ to eject the cassette that it is already inserted.
Remote control does not function.	• Replace the batteries.
The standby indicator I/⏻ on the Video TV flashes.	• Contact to your nearest Sony service centre.

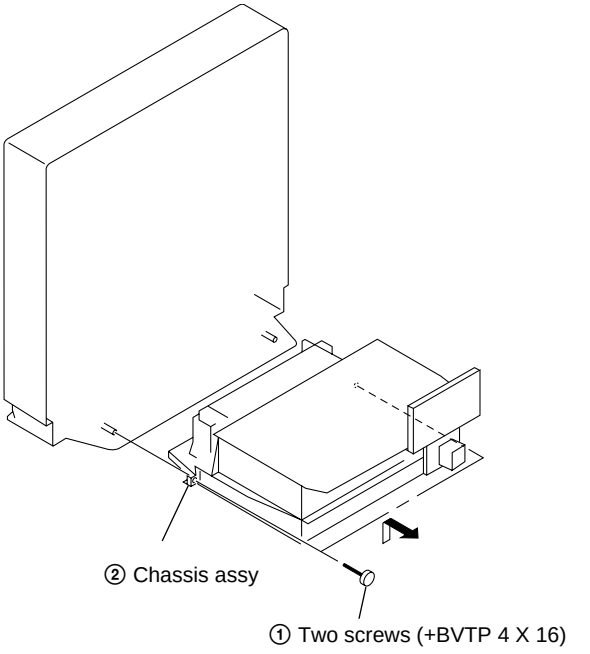
In case of problems, have your TV serviced by qualified personnel. Never open the casing yourself.

SECTION 2
DISASSEMBLY

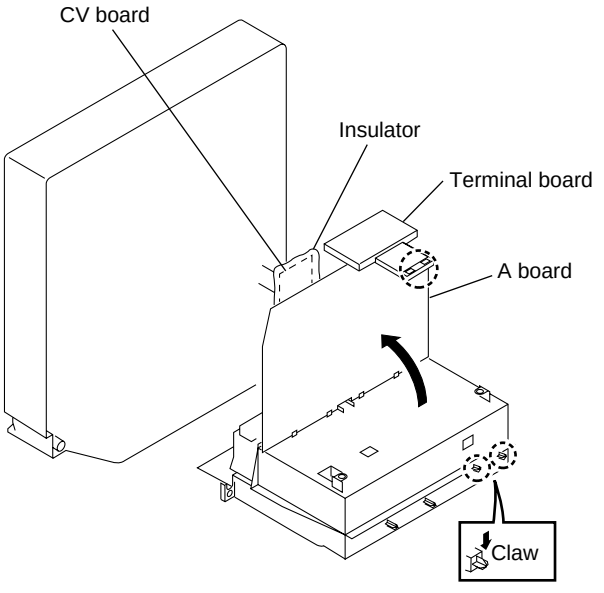
2-1. REAR COVER REMOVAL



2-2. CHASSIS ASSY REMOVAL

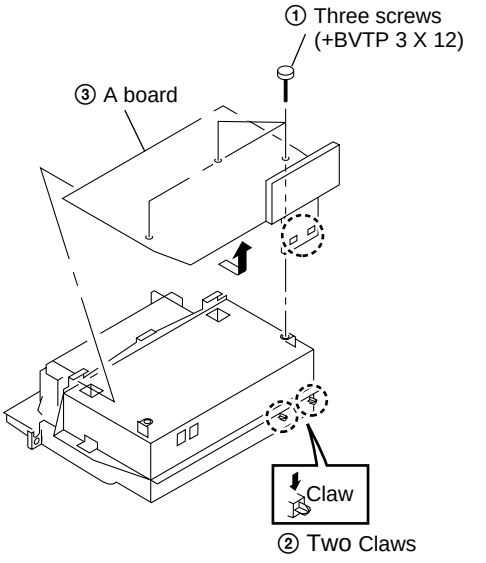


2-3. SERVICE POSITION (A BOARD)

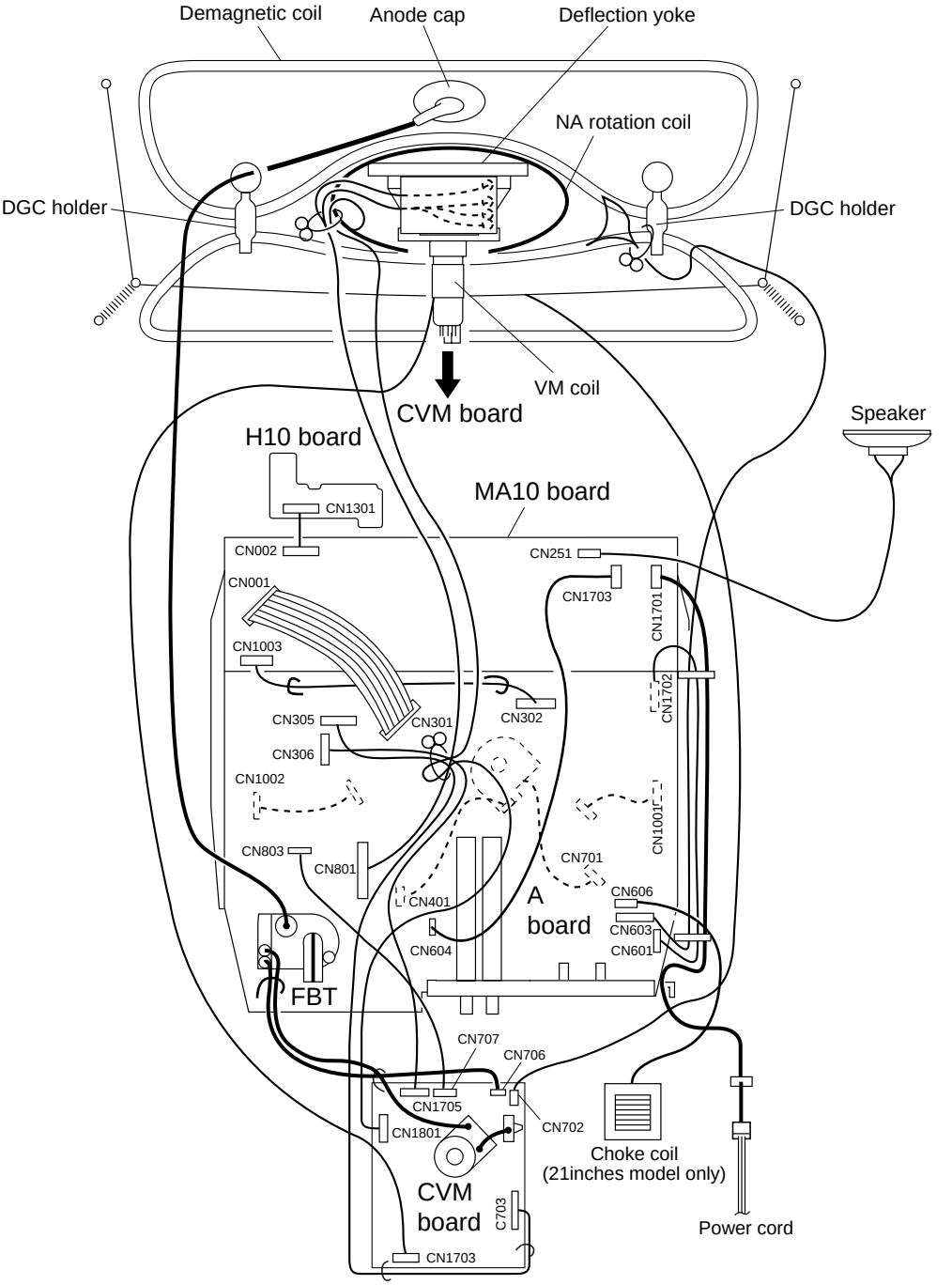


Note: Open the A board after slide the terminal board

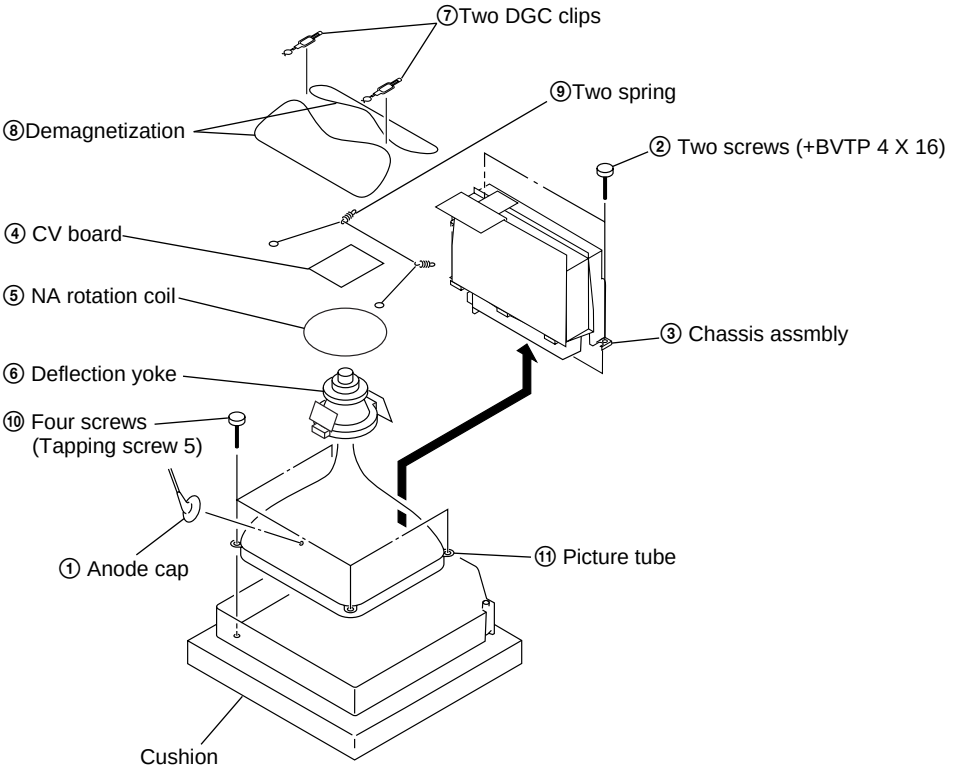
2-4. A BOARD REMOVAL



2-5. HARNESS LOCATION



2-6. PICTURE TUBE REMOVAL

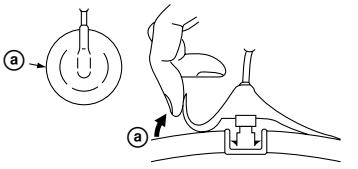


- **Removal of anode-cap**

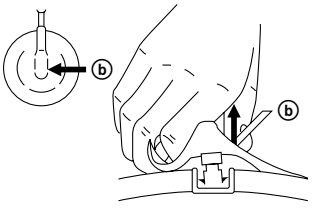
NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

- **removing procedures**

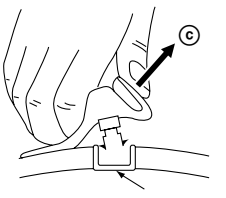
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

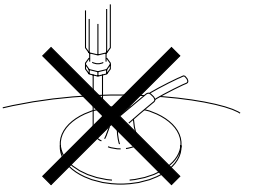


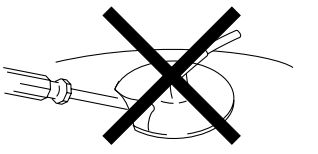
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ.



- **how to handle an anode-cap**

① Don't hurt the surface of anode-caps with shaped objects!
② Don't press the rubber too hard so as not to hurt inside of anode-caps!
A metal fitting called the shatter-hook terminal is built into the rebber.
③ Don't turn the foot of rubber over too hard!
The shatter-hook terminal will stick out of damage the rubber.





SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The PICTURE and Brightness controls should be set as follows unless otherwise noted:

CONTRAST ..... 100% (LIVE)
BRIGHTNESS control 50%
COLOUR 50%
HUE 50%
SHARPNESS 50%

Perform the adjustments in the following order:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G2)
5. White Balance
6. Picture Distortion

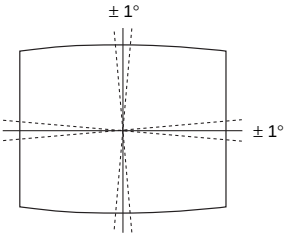
Note: Test Equipment Required.
1. Color bar/Pattern Generator
2. Degausser
3. Oscilloscope

Preparation:

- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

1. Degauss CRT screen.
2. Inut all-green pattern.
3. Adjust roughly landing at the centre of the screen by moving the purity magnet.
4. Adjust toughly landing at both right and left sides of the screen by sliding the DY forward or backward.
5. Adjust landing according to the lupe method or the allowance mothod.
6. Adjust DY so the horizontal tilt of DY is within the standard. Product standard is as follows.



7. Use disk magnet, if landing at the corner is not good. Disk mg shold be applyied on the funnel. Don't use mag if possible because of picture distortion.
8. Screw down the DY.

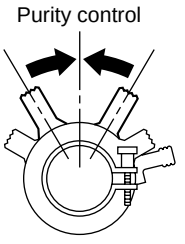


Fig.3-1

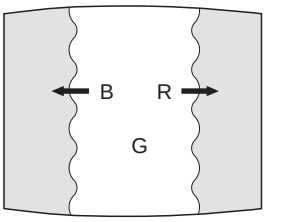


Fig.3-2

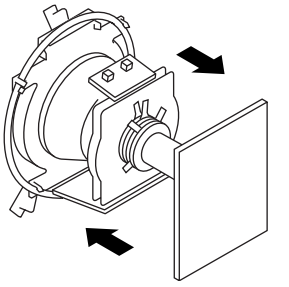


Fig.3-3

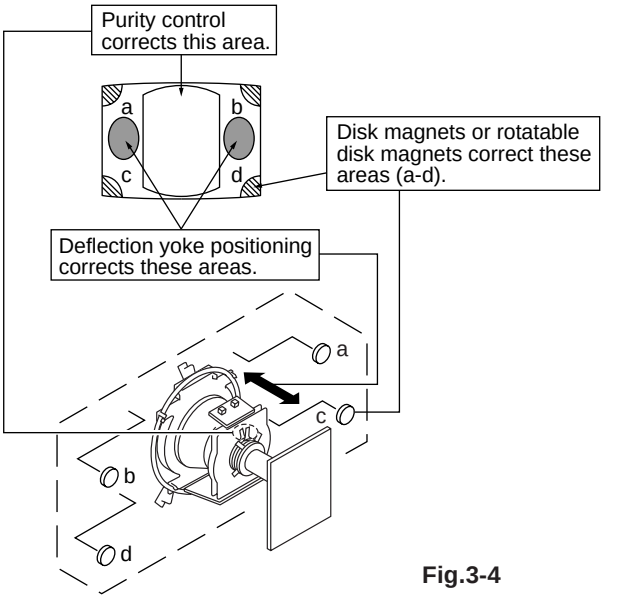
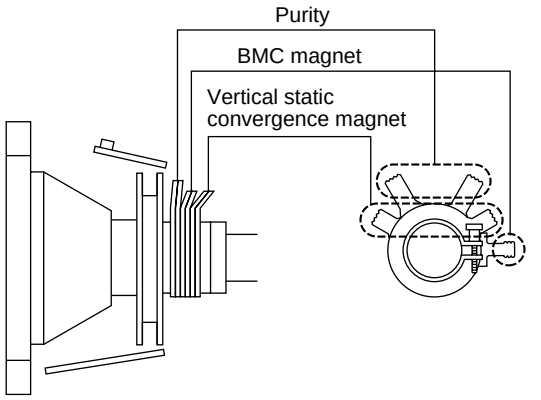


Fig.3-4

3-2. CONVERGENCE



(1) Horizontal and Vertical Static Convergence

1. Receive the channel with dot signal.
2. Minimize BRT and set picture level to the position where the dot is easy to see.
3. Adjust horizontal convergence at the centre of the screen with V. STAT correction piece.
4. Adjust vertical convergence of dot at the centre of the screen with V. STAT MG.
5. Adjust repeatedly static convergence according to righe figure in case that both HMC and VMC are not independant.
   In case of both HMC and VMC exist attach BMC magnet to neck assembly.
   Case of HMC attached
   Turn BMC over in case of adjustment in opposite direction.
   Use BMC mg only when it is necessary, for it makes CRT focus worse.

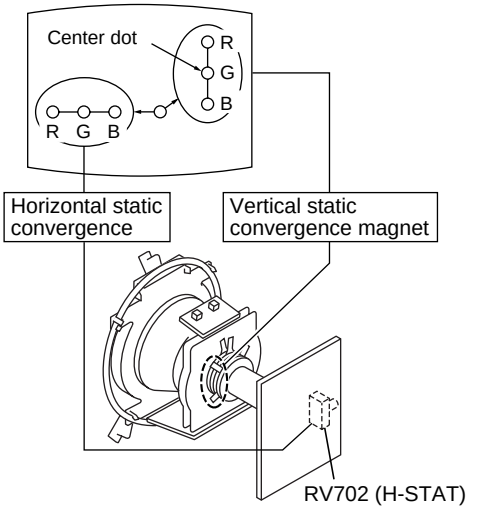
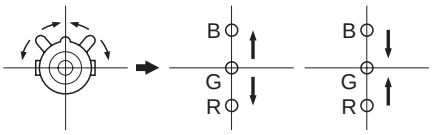


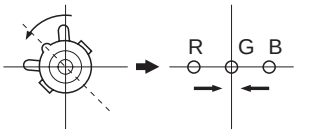
Fig.3-5

- **Movement of red, green and blue dots by V. STAT tilting and opening or closing.**

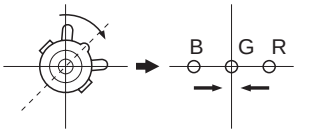
① Movement of opening or closing the V. STAT convergence magnet.



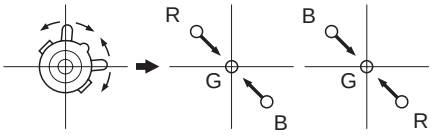
② Movement of tilting the V. STAT convergence magnet counterclockwise.



③ Movement of tilting the V. STAT convergence magnet clockwise.

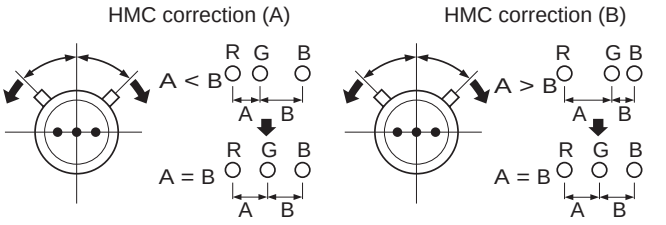


④ Movement of tilting and opening or closing the V. STAT convergence magnet.

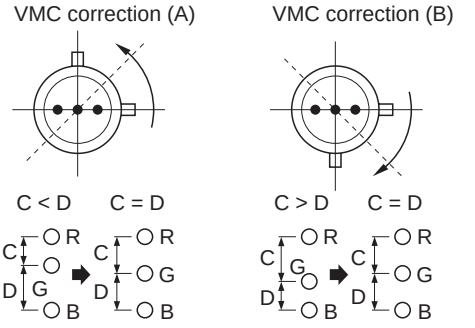


- **If the blue dot did not harmonize with red and green, then use the BMC magnet to adjust.**

1)HMC (Horizontal mis-convergence) correction



2)VMC (Vertical mis-convergence) correction.



(2) Convergence adjustment of screen surroundings.

(Dynamic convergence)

1. Recieve dot pattern.
2. Set BRT to main and PIC to the level where dot pattern is easy to see.
3. Shake DY up and down. Insert DY spacer at position 'A' so that cross MIS convergence is minimum.
4. Shake DY right or left and insert DY spacer at position 'C' and 'D' where tilt is the smallest both on vertical and horizontal axis.

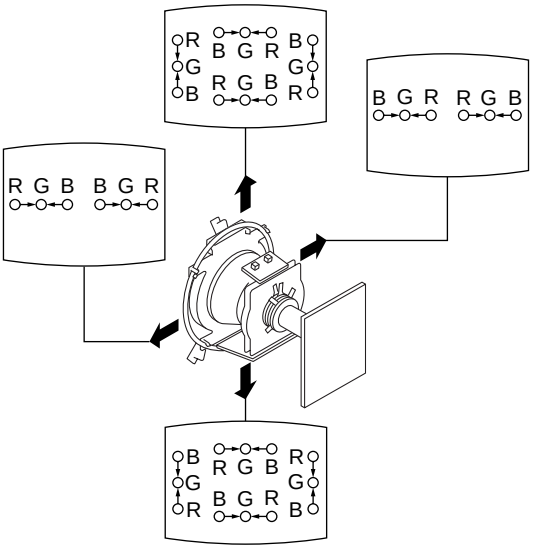


Fig.3-6

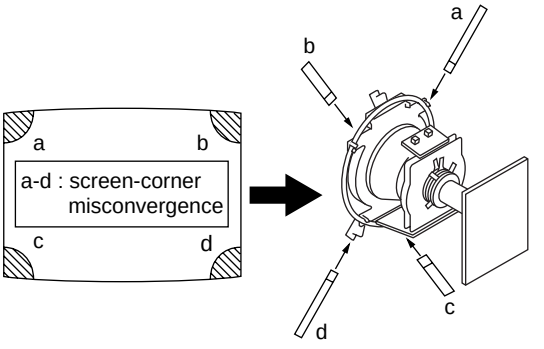


Fig.3-7

3-3. FOCUS ADJUSTMENT

1. Receive monoscope pattern.
2. Adjust FBT focus VR so that the picture has the best focus.
   Adjust the focus so that the center of the screen is in the best focus.
   Turn focus VR clockwise to the end and then turn back counter clockwise.
   While turning back, pay attention to the centre cross of the colour pattern, and then adjust the VR so that horizontal line because clear and vertical line begins to become unclear.
   Change signal to dot pattern, confirm that corner focus is good.
3. Receiving white signal, confirm that magenta ring is hardly noticed.

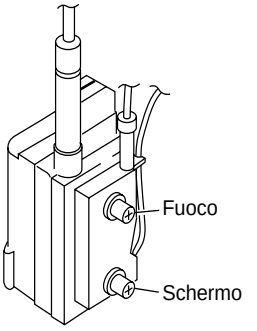


Fig.3-8

3-4. SCREEN (G2) ADJUSTMENT

1. Receive a Black signal, Cross and Hatch signal or dots signal.
2. Make sure to be in Personal, reset condition.
3. Adjust screen VR on FBT so that highest level of black area among kathodes is 175 ± 2 V.

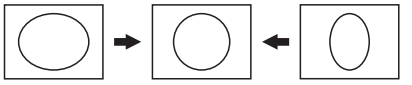
3-5. WHITE BALANCE ADJUSTMENT

1. Input ehite pattern. Adjust white balance of drive side, using service mode VP No. 22 RAMP, No. 23 GAMP and No. 24 BAMP, so that colour temperature is 8600 K + 0 MPCD.
2. Input gray pattern for 10NIT. Adjust white balance of cut-off side, using service mode No. 25 RCUT, No. 26 GCUT and No. 27 BCUT, so that colour temperature is 8600 K + 0 MPCD.
3. To take tracking, confirm again that colour temperatures of both side are within the limit of the above standard 8600 K + 0 MPCD. If necessary, re-adjust.
   W/B Specification:
   H/L difference = 2JND or less
   C/O difference = 3JND or less

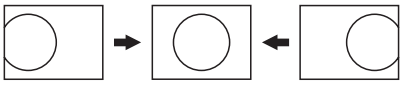
3-6. PICTURE DISTORTION ADJUSTMENT

- When performing these adjustment, do receive monoscope signal.

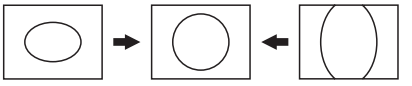
VP01 (HSIZ)



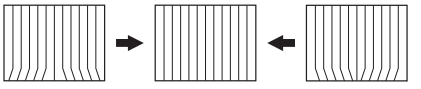
VP02 (HPOS)



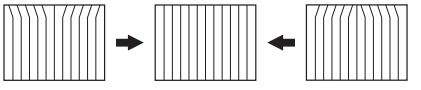
VP03 (VSIZ)



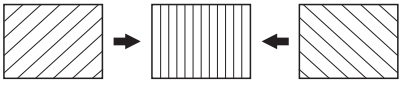
VP04 (LCPN)



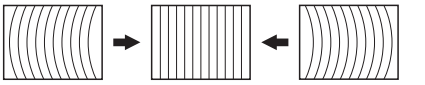
VP05 (UCPN)



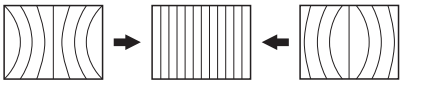
VP06 (AFAG)



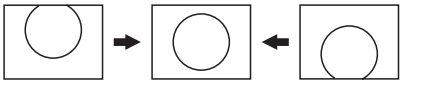
VP07 (AFBW)



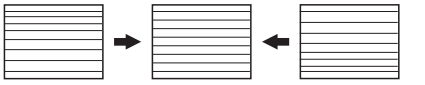
VP08 (PAMP)



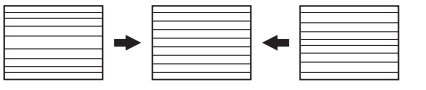
VP09 (VPOS)



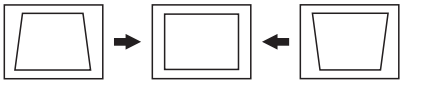
VP10 (VLIN)



VP11 (SCOR)



VP13 (TRAP)

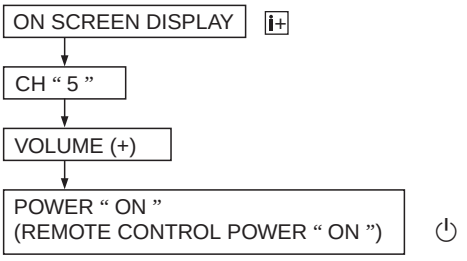


SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENTS WITH COMMANDER

1. ENTERING SERVICE MODE

1) Turn on the main power of the set and enter into stand-by mode.
2) Press the following sequence of buttons on the Remote Control Commander.



2. TO READ THE MEMORY

1) Set to service mode.
2) When push these buttons [7] → [0] on the remote commander, it would read all item's adjustment value and switch set-up value which written in the memory.

Note: Do not read before "standard value" writing when exchange the MEMORY IC002.

3. PICTURE ADJUSTMENT

1) Select adjustment item number of service mode by [1] and [4] buttons on the remote commander.
2) Adjust [3] and [6] buttons to satisfy set-up value and picture condition of the screen.

4. WRITE TO THE MEMORY

- After adjusted, write to the MEMORY by [MUTE] and [0] buttons and push [0] button while green "light" word indicated on the picture display (about 3 seconds). It takes about 1 second to complete the writing to the MEMORY. When red "light" displayed turns to "G" and that makes writing completely finish.

Color of the screen displayed light word.

[MUTE] button on ..... Green word
[0] button on ..... Red word

5. RELEASE THE SERVICE MODE

- Turn off TV set and turn on again or turn off by the remote commander, and turn off by the remote commander again by stand-by state to disappear serivce display and set to normal TV mode.

6. WRITING "STANDARD VALUE"

1) Set to service mode.
2) When push [5] button on the remote commander green colored "INITIAL write" indicates on the screen right above. Continuing to press [0] button while words are displaying (about 3 seconds). Display turns to red colored "INITIAL write" then the screen become pitch-dark and select 1ch about 5 seconds after. Then it turns green colored "G" display.

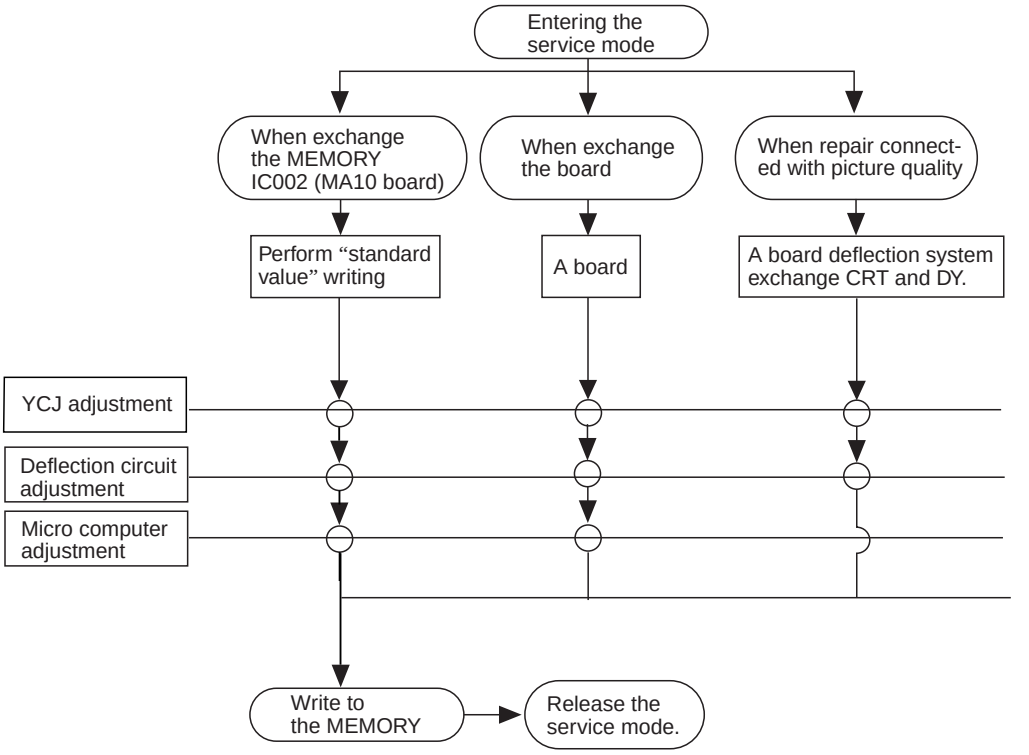
   Perform writing "standard value" standard data in micro computer will write to the MEMORY and set to initialization state all.

Note: When exchange only MEMORY IC002, perform "standard value" writing in the begginning.

4-2. ADJUSTMENT METHOD

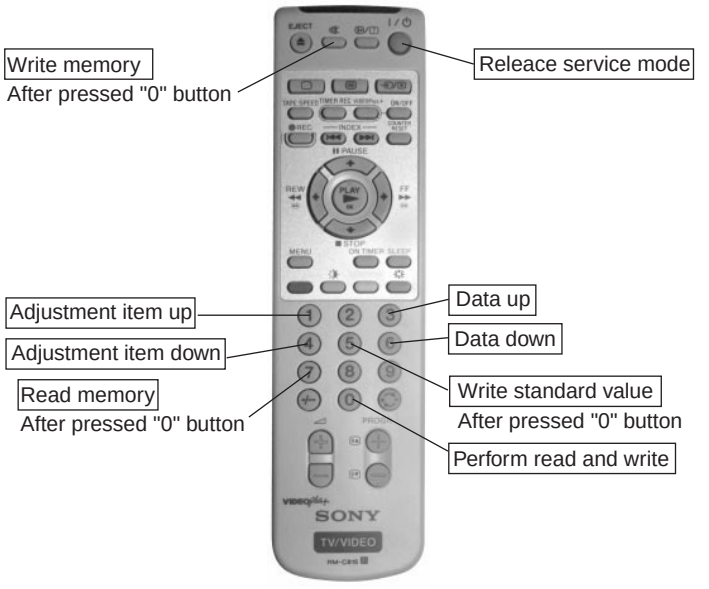
Service adjustment to this model can be performed with the supplied Remote Control Commander RM-955, 956.

- **HOW TO ENTER INTO SERVICE MODE**

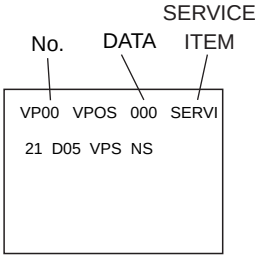

Entering the service mode
When exchange the MEMORY IC002 (MA10 board)
When exchange the board
When repair connect-ed with picture quality
Perform “standard value” writing
A board
A board deflection system exchange CRT and DY.
YCJ adjustment
Deflection circuit adjustment
Micro computer adjustment
Write to the MEMORY
Release the service mode.

Note : • Write to the MEMORY every performing one item adjustment.
• Before writing to the MEMORY adjusted data would not memorize when turn off.

- **REMOTE COMMANDER'S FUNCTION IN SERVICE MODE**



- **SERVICE MODE DISPLAY**



4-3. SERVICE DATA

No.	DISP	DATA RANGE	STANDARD DATA	ITEM	DEVICE
VP00	SBRT	00-3F	17	SUB BRIGHT	CXA2139S (Y/C/J)
VP01	HSIZ	00-3F	27	H SIZE	
VP02	HPOS	00-3F	1B	H POSITION	
VP03	VSIZ	00-3F	1D	V SIZE	
VP04	LCPN	00-3F	IE	LOWERSIDE CORNER PIN	
VP05	UCPN	00-3F	17	UPPERSIDE CORNER PIN	
VP06	AFAG	00-0F	07	AFC ANGLE	
VP07	AFBW	00-0F	07	AFC BOW	
VP08	PAMP	00-3F	0C	PIN AMPLITUDE	
VP09	VPOS	00-3F	22	V POSITION	
VP10	VLIN	00-0F	07	V LINEARITY	
VP11	SCOR	00-0F	07	S CORRECTION	
VP12	AFC	00-03	01	AFC LOOP GAIN SWITCHING	
VP13	TRAP	00-0F	06	TRAPEZIUM	
VP14	HBLK	00-01	00	H BLANKING	
VP15	LBLK	00-0F	07	LEFT H BLANKING	
VP16	RBLK	00-0F	07	RIGHT H BLANKING	
VP17	VUND	00-01	00	V UNDER SCAN	
VP18	EHT	00-0F	07	EHT COMP	
VP19	HSS	00-01	00	SLICE LEVEL OF H SYNC SEPARATION	
VP20	VSS	00-01	00	SLICE LEVEL OF V SYNC SEPARATION	
VP21	HMSK	00-01	01	H MASK	
VP22	RAMP	00-3F	21	R DRIVE	
VP23	GAMP	00-3F	14	G DRIVE	
VP24	BAMP	00-3F	0F	B DRIVE	
VP25	RCUT	00-0F	0F	R CUTOFF	
VP26	GCUT	00-0F	06	G CUTOFF	
VP27	BCUT	00-0F	00	B CUTOFF	
VP28	SCOL	00-3F	21	SUB COLOR FOR PAL	
VP29	SHUE	00-1F	1F	SUB HUE	
VP30	SSHP	00-0F	07	SUB SHARPNESS	
VP31	SHPF	00-01	00	SHARPNESS F0 SWITCHING	
VP32	PREL	00-01	00	PRE/OVER-SHOOT RATIO SWITCHING	
VP33	GAMM	00-01	02	GAMMA CORRECTION	
VP34	ABLM	00-01	01	ABL MODE	
VP35	VTH	00-01	01	ABL VTH	
VP36	DYCL	00-01	01	DYNAMIC COLOR	
VP37	YDC	00-01	01	DC TRAN	
VP38	RON	00-01	01	R ON	
VP39	GON	00-01	01	G ON	
VP40	BON	00-01	01	B ON	
VP41	CDMD	00-03	00	COUNT DOWN MODE	
VP42	HOSC	00-0F	07	H VCO'S OSCILLATION	
VP43	VMSW	00-01	00	VM SW	
VP44	YDE	00-0F	00	Y DELAY	
VP45	PAF	00-03	00	PB AFC	
VP46	IDS	00-03	02	ID START	
VP47	IDP	00-03	02	ID STOP	
VP48	IDL	00-03	02	ID LEVEL	
VP49	BELL	00-3F	25	BELL F0	
VP50	SCSE	00-3F	1F	SUB COLOR FOR SECAM	
VP51	GDSE	00-0F	07	G DRIVE (SECAM) *DISPLAY -7 to +8*	
VP52	BDSE	00-0F	07	B DRIVE (SECAM) *DISPLAY -7 to +8*	
VP53	RCSE	00-1F	10	R CUTOFF (SECAM) *DISPLAY -15 to +16*	
VP54	GCSE	00-1F	10	G CUTOFF (SECAM) *DISPLAY -15 to +16*	
VP55	BCSE	00-1F	10	B CUTOFF (SECAM) *DISPLAY -15 to +16*	
VP56	GDLI	00-0F	07	G DRIVE (LIVE) *DISPLAY -7 to +8*	
VP57	BDLI	00-0F	07	B DRIVE (LIVE) *DISPLAY -7 to +8*	
VP58	RCLI	00-0F	07	R CUTOFF (LIVE) *DISPLAY -7 to +8*	
VP59	GCLI	00-0F	07	G CUTOFF (LIVE) *DISPLAY -7 to +8*	
VP60	BCLI	00-0F	07	B CUTOFF (LIVE) *DISPLAY -7 to +8*	

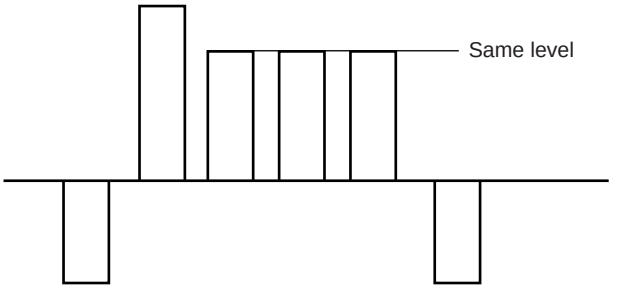
No.	DISP	DATA RANGE	STANDARD DATA	ITEM	DEVICE
IF00	AMFM	00-01	00	AUTO MUTE FM	
IF01	GAIN	00-01	00	AUDIO GAIN	
IF02	GATE	00-01	00	GATING (POSITIVE MODULATION)	
IF03	TOP	00-1F	10	TAKE OVER POINT *DISPLAY -16 to +15*	CXP85452 (μ-COM)
IF04	TAGC	00-1F	10	AGC FOR TV TUNER *DISPLAY -16 to +15*	
IF05	VAGC	00-1F	10	AGC FOR VCR TUNER *DISPLAY -16 to +15*	

No.	DISP	DATA RANGE	STANDARD DATA	ITEM	DEVICE
OP00	OSDH	00-3F	06	OSD HORIZONTAL POSITION	
OP01	NS	00-01	01	NS COIL	CXP85452 (μ-COM)
OP02	LWAI	00-1F	13	L SYSTEM TUNING WAIT TIMER	
OP03	HDCG	00-03	00	HEADCLOG DETECT	
OP04	MUT	00-01	01	FTZ MUTE (0:OFF 1:ON)	
OP05	VPS	00-01	01	VPS (0:NO EXIST 1:EXIST)	
OP06	BDES	00-01	00	B DESTINATION (0:OTHERS 1:B)	
OP07	UDES	00-01	00	U DESTINATION (0:OTHERS 1:U)	
OP08	ID0	00-01	00	PAINTER M3A/M3C SELECT (0:M3A 1:M3C)	
OP09	ID1	00-01	00	NVM-ID1 (RESERVE)	

4-4. A BOARD ADJUSTMENT

1. SUB COLOUR ADJUSTMENT

1) Recieve the PAL colour bar signal.
2) Check the pin④ of CN305 by oscilloscope.
3) Adjust the part of the right waveform to become the same level by service mode (VP28:Sub colour).



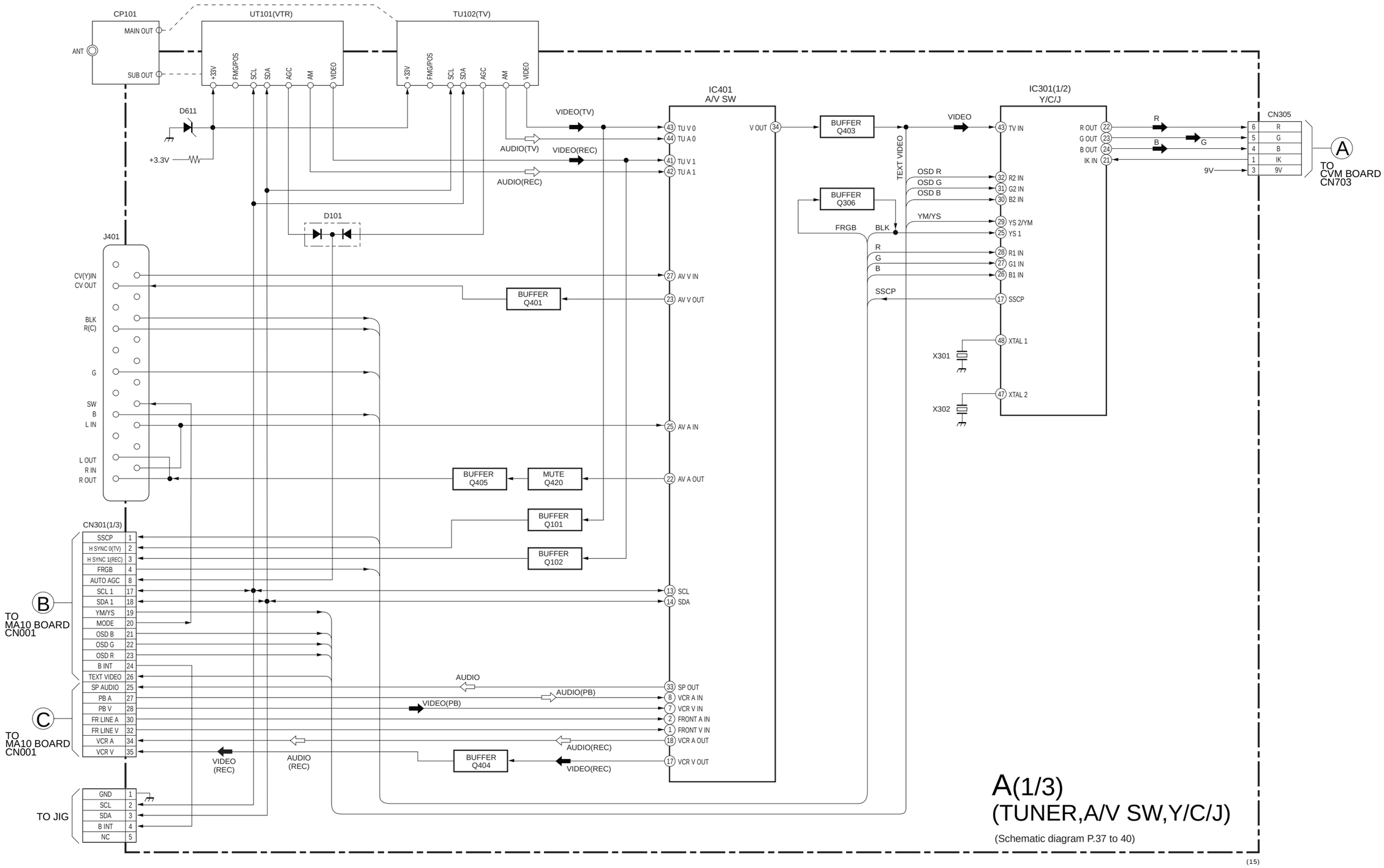
B-Out waveform

Fig.4-1

TV BLOCK

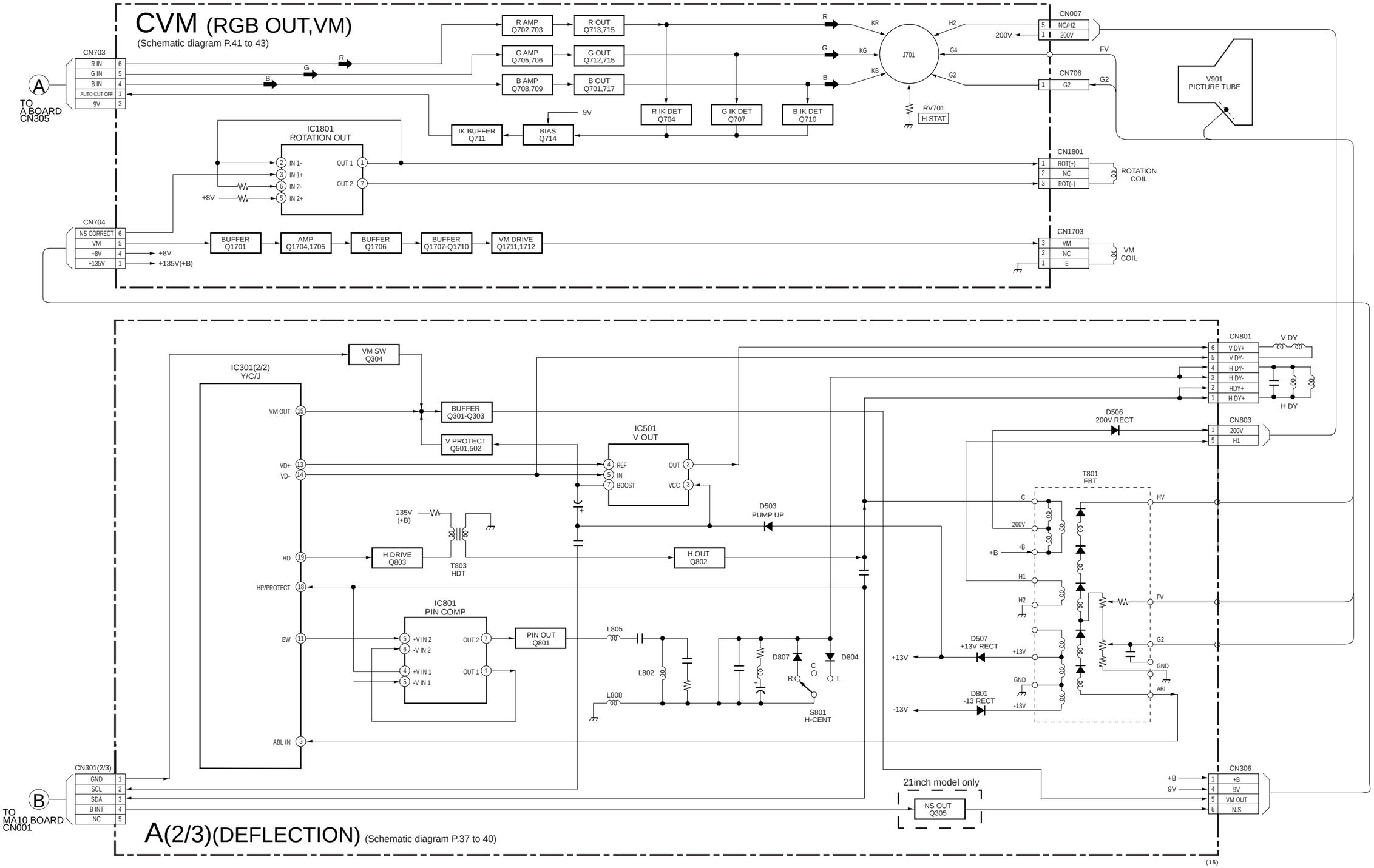
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS

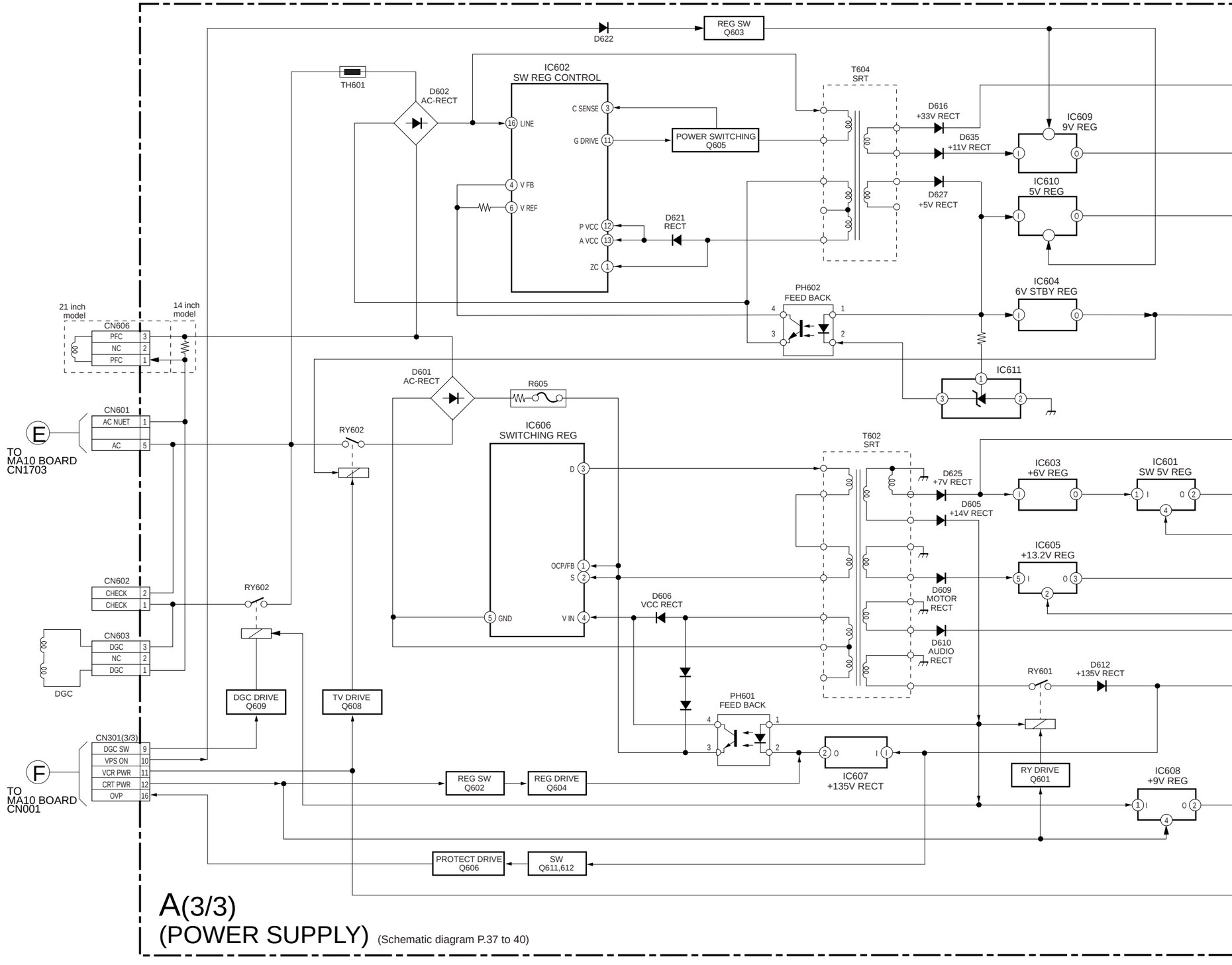


CVM (RGB OUT,VM)

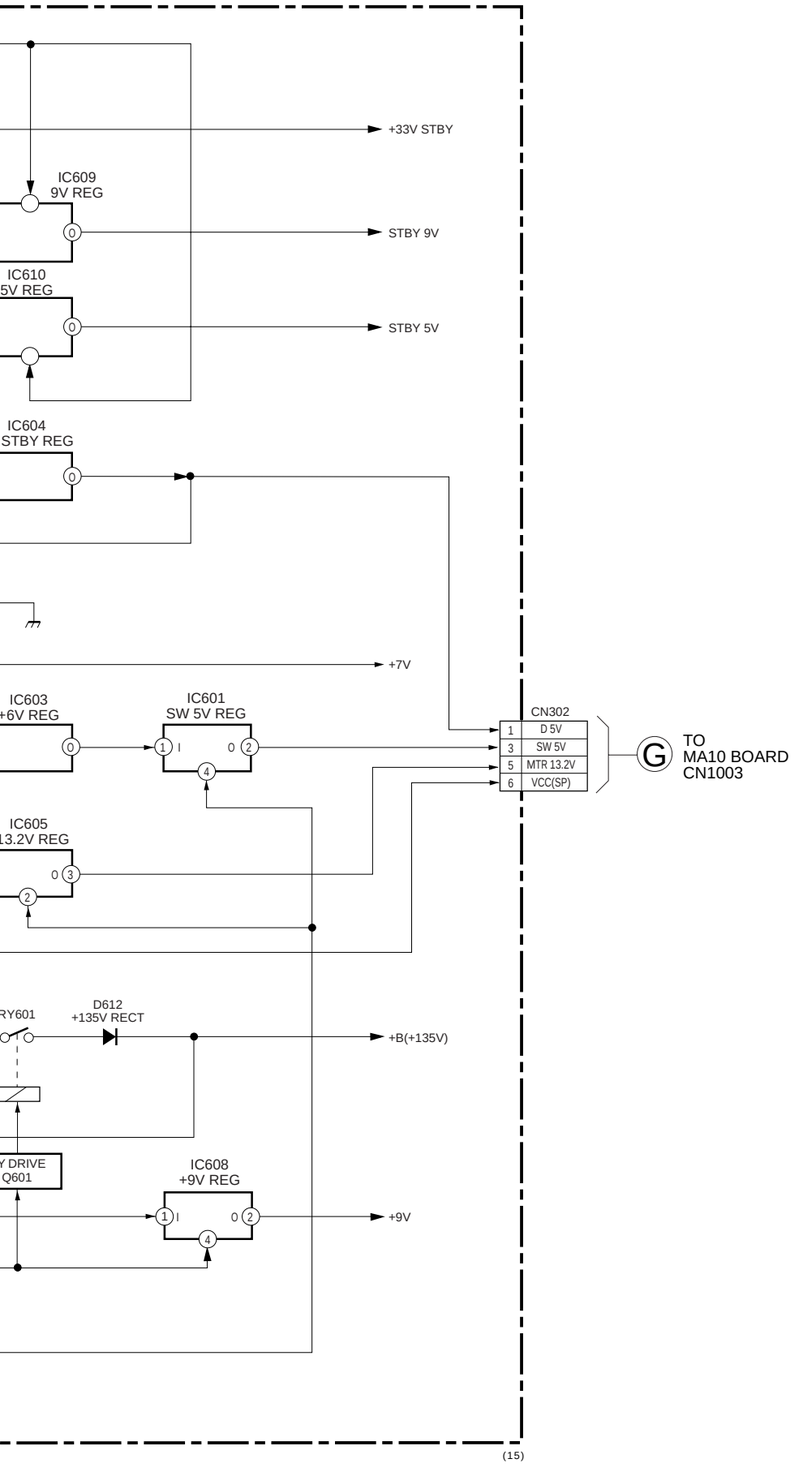
(Schematic diagram P.41 to 43)



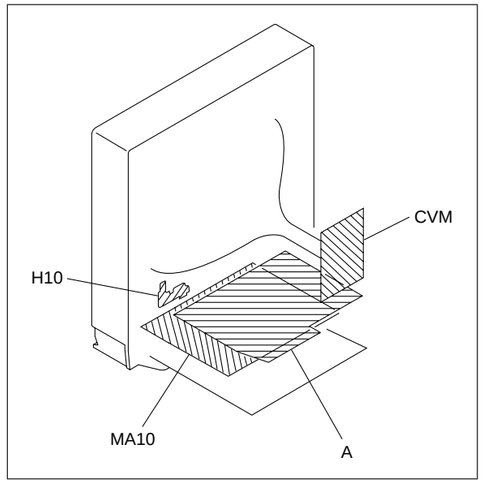
(15)



A(3/3)
(POWER SUPPLY) (Schematic diagram P.37 to 40)



5-2. CIRCUIT BOARDS LOCATION



5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF
  Capacitors without voltage indication are all 50V.
- All resistors are in ohms.
  k = 1000 , M = 1000k
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power: 1/4W(CHIP:1/10W)

- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.

- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform reference.
- : B + line
- : B – line.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFRAMMABLE FUSIBLE
	: RW	NONFRAMMABLE WIREWOUND
	: RS	NONFRAMMABLE METAL OXIDE
	: RB	NONFRAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Terminal name of semiconductors in silk screen printed circuit (⁎)

	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector / Base T Emitter	
②	Transistor	—	Collector / Base — Emitter	
③	Diode		Cathode — Anode	
④	Diode	T	Cathode / Anode T (NC)	
⑤	Diode	—	Cathode / Anode — (NC)	
⑥	Diode	T	Common / Anode T Cathode	
⑦	Diode	—	Common / Anode — Cathode	
⑧	Diode	T	Common / Anode T Anode	
⑨	Diode	—	Common / Anode — Anode	
⑩	Diode	T	Common / Cathode T Cathode	
⑪	Diode	—	Common / Cathode — Cathode	
⑫	Diode	‖	Anode Anode Cathode ‖ Cathode Anode Anode	

(Chip semiconductors that are not actually used are included.)

Ver.1.6

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part nummber specified.

**Note: Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.**

A [TUNER, A/V SW, Y/C/J, HV DEFLECTION, POWER SUPPLY]

A BOARD

IC

IC301	K-2	
IC401	F-6	
IC501	L-4	
IC601	A-2	
IC602	D-6	
IC603	A-3	
IC604	F-2	
IC605	B-3	
IC606	A-4	
IC607	F-2	
IC608	K-3	
IC609	F-3	
IC610	G-3	
IC611	F-3	
IC801	L-2	

TRANSISTOR

		*
Q101	F-4	①
Q102	F-3	①
Q301	K-3	①
Q302	J-3	①
Q303	K-3	①
Q304	I-3	①
Q305	J-3	①
Q306	I-2	①
Q401	F-7	①
Q402	F-7	①
Q403	G-6	①
Q404	E-5	①
Q405	F-7	①
Q501	K-3	①
Q502	K-3	①
Q601	E-2	①
Q602	E-2	①
Q603	F-3	①
Q604	E-1	①
Q605	D-4	-
Q606	H-2	①
Q608	B-8	①
Q609	F-3	①
Q611	I-3	-
Q612	I-3	①
Q801	J-4	-
Q802	I-8	-
Q803	H-7	-

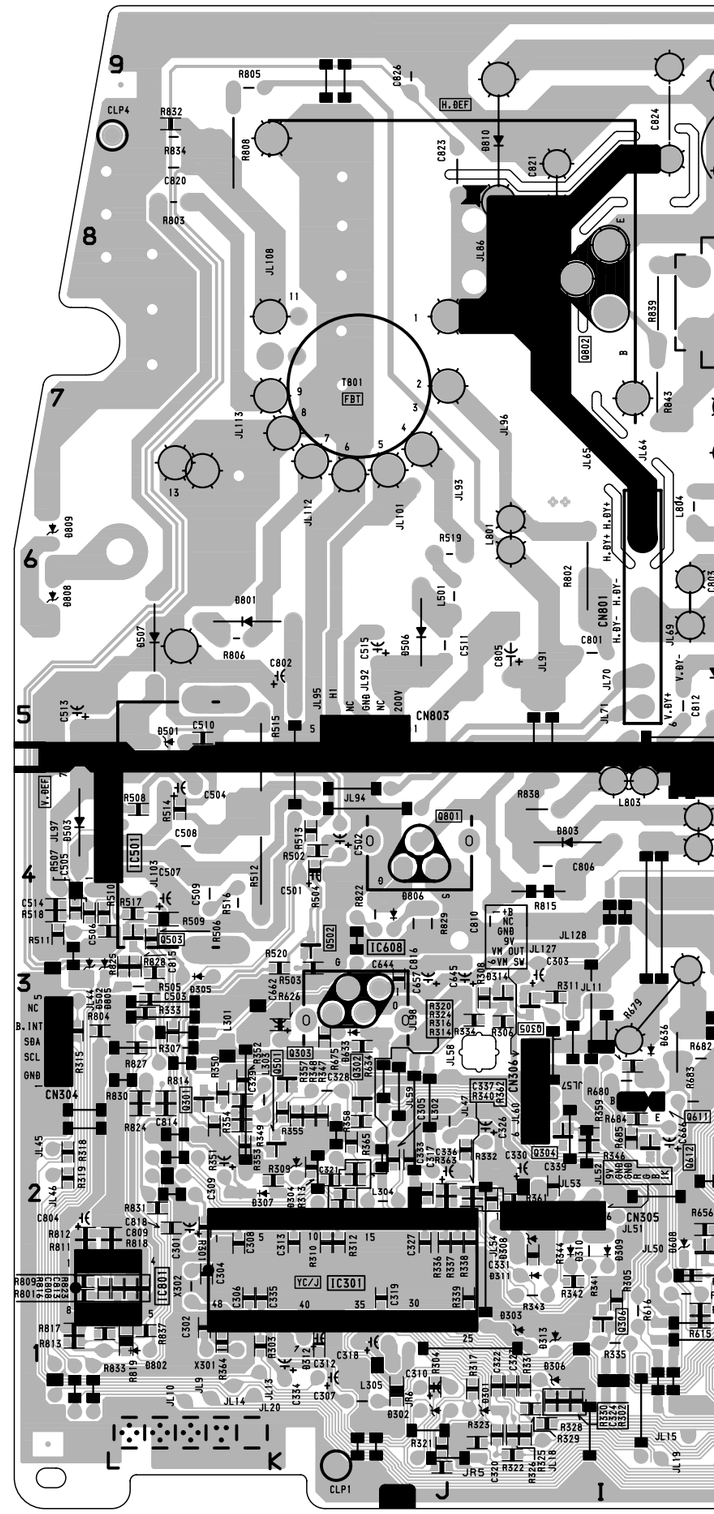
DIODE

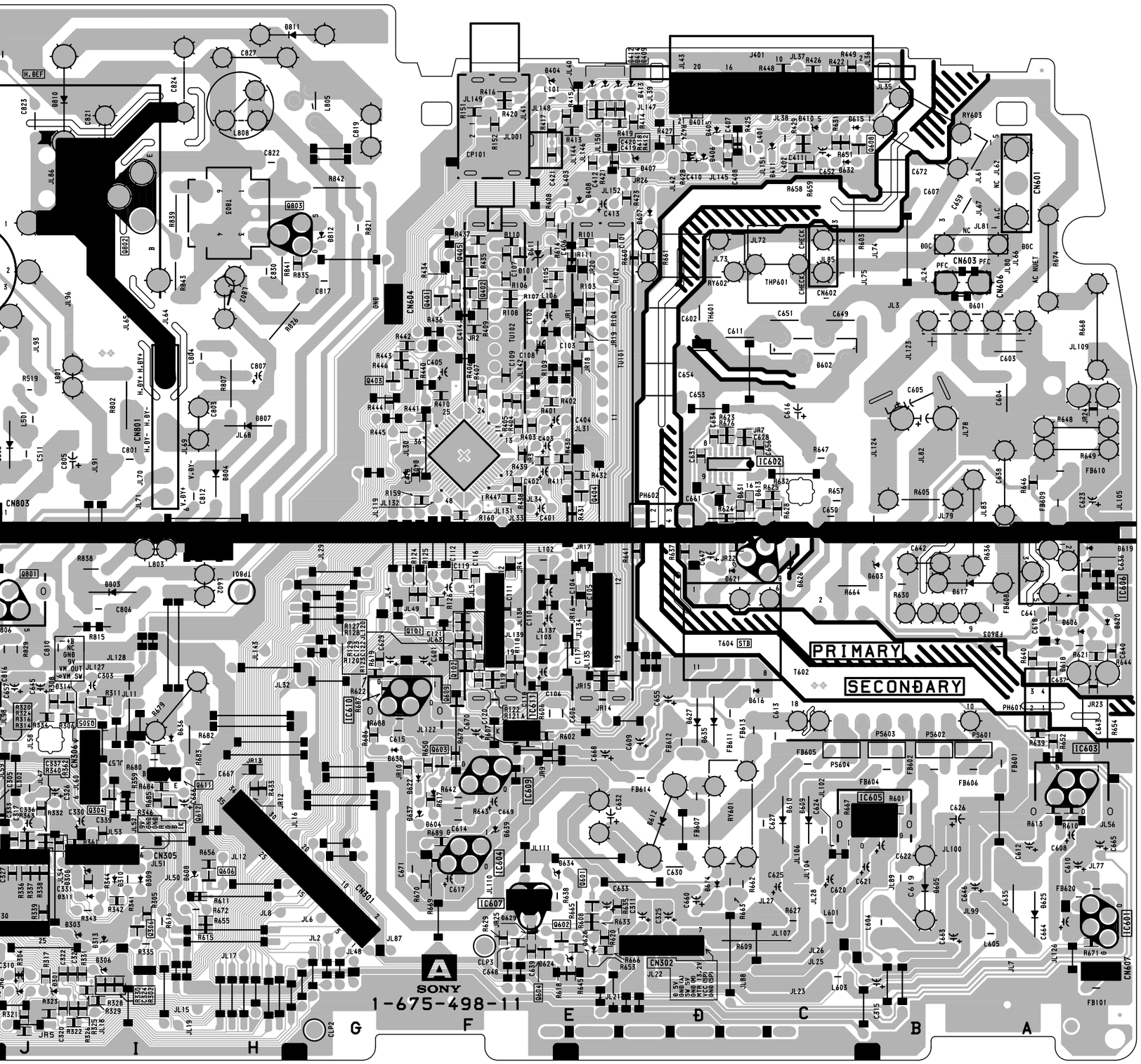
		*
D101	E-7	⑧
D102	——	
D103	——	
D301	J-1	-
D302	J-1	-
D304	K-2	-
D305	L-3	-
D307	K-2	-
D308	I-2	-
D313	I-1	-
D314	J-3	-
D401	D-8	③
D402	G-5	-
D404	E-8	-
D405	D-8	-
D406	D-8	-
D407	E-8	-
D408	E-7	-
D409	E-8	-
D410	C-8	-
D411	C-8	-
D412	E-8	-
D413	E-8	-
D414	E-8	-
D501	L-5	-
D502	L-3	-
D503	L-4	-
D506	J-5	-
D507	L-5	-
D601	B-7	-
D602	C-7	-
D604	F-3	-
D605	B-2	-
D606	A-4	-
D607	D-7	-
D608	I-2	-
D609	C-3	-
D610	C-3	-
D611	E-7	-
D612	D-2	-
D613	D-5	③
D614	D-2	-
D615	C-8	-
D616	C-3	-
D617	B-4	-
D618	A-4	-
D619	A-4	-
D620	A-4	-
D621	D-4	-
D622	F-3	-
D623	——	
D624	E-1	-
D625	A-2	-
D626	C-4	-
D627	D-3	-
D628	E-1	-
D629	E-2	-
D631	D-5	③
D632	C-8	-
D633	K-3	-
D634	E-2	-
D635	D-3	-
D636	I-3	-
D637	F-2	-
D638	G-3	-
D639	F-2	-
D801	K-6	-
D803	I-4	-
D804	H-5	-
D805	L-3	-
D807	H-6	-
D810	J-9	-
D811	H-9	
D812	G-7	-

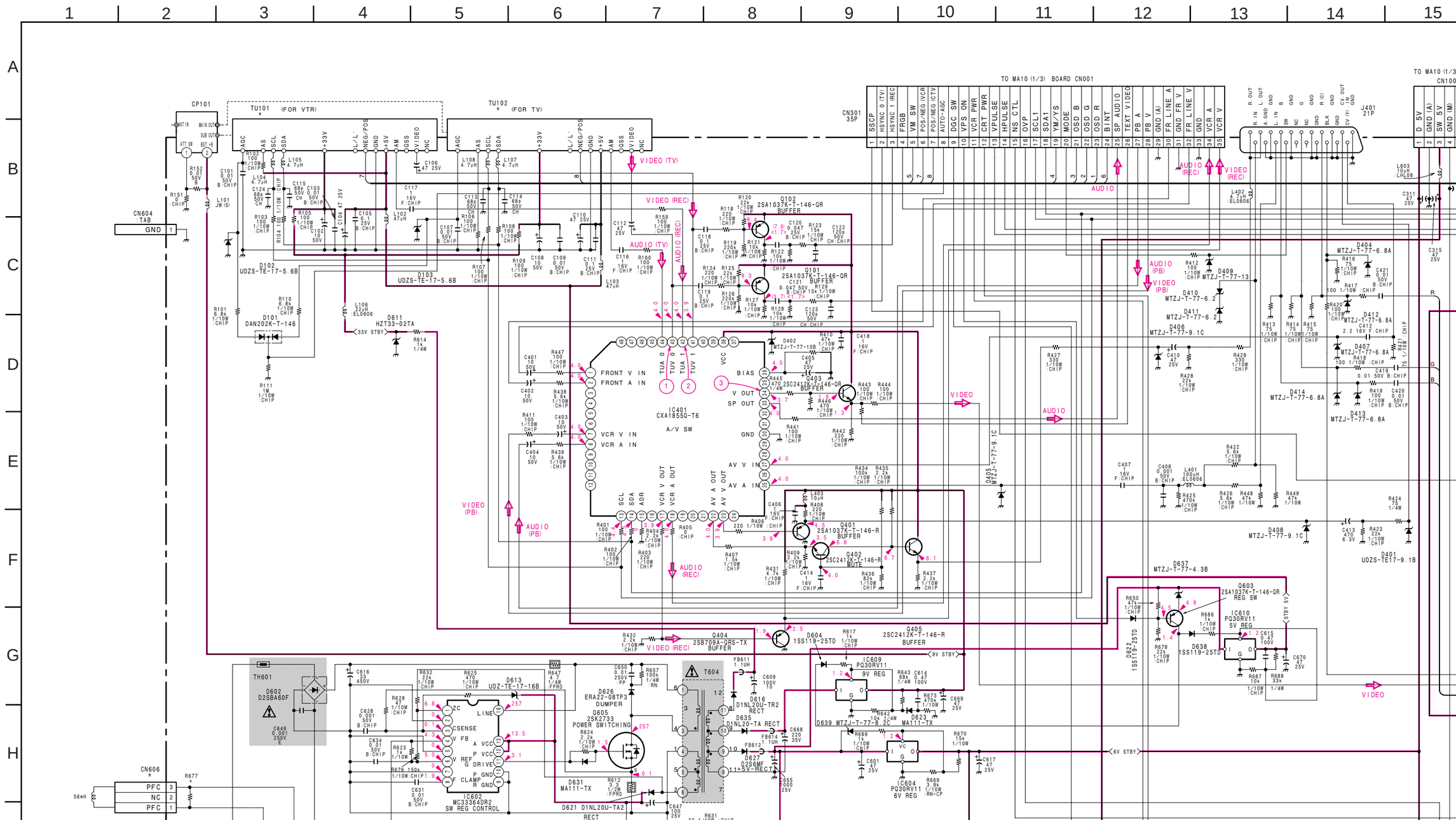
∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 33).

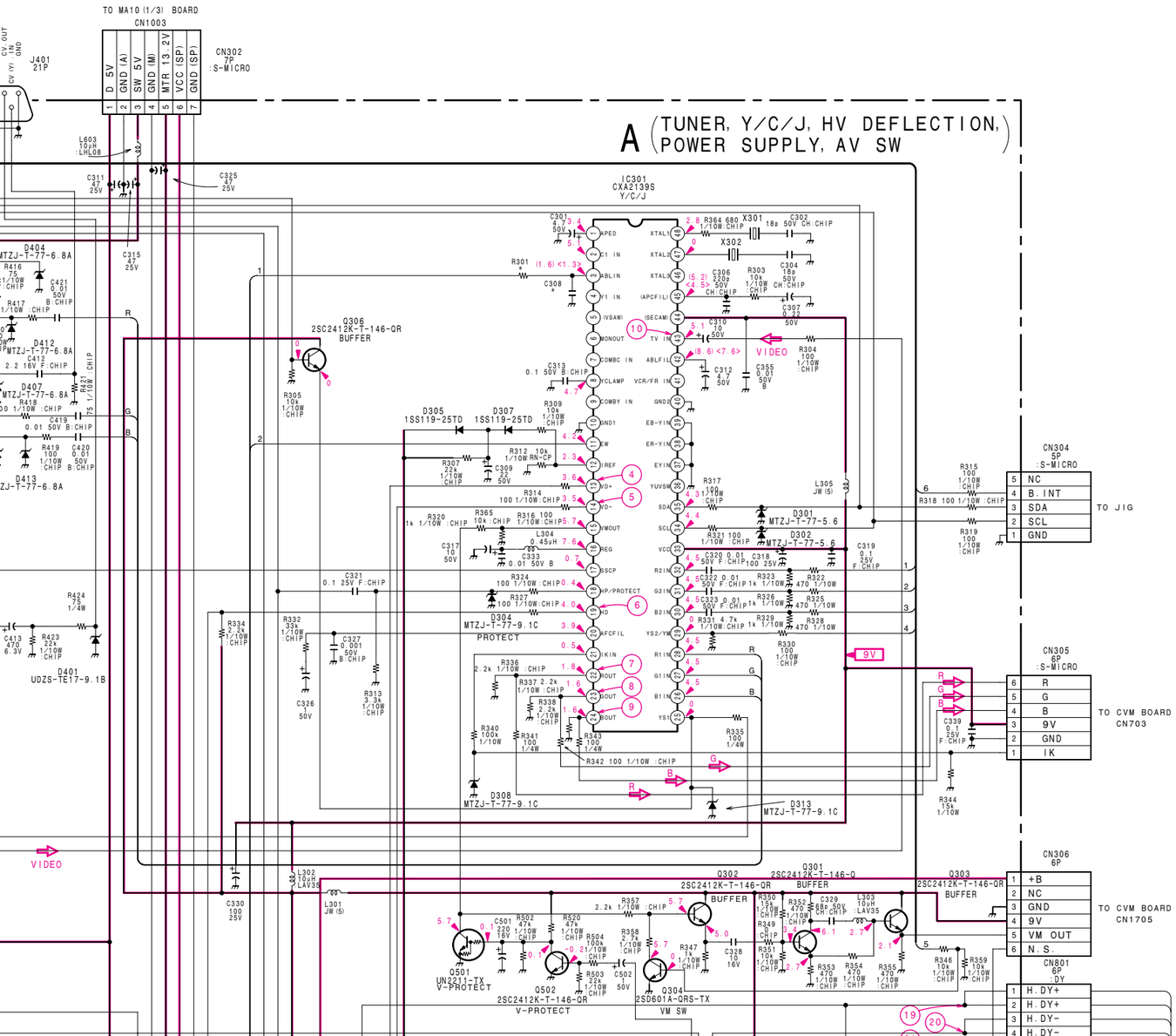
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

– A BOARD –

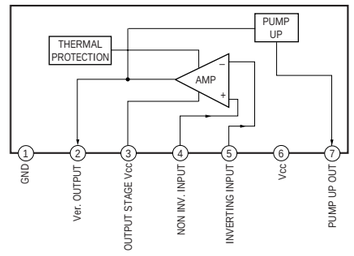



PRIMARY
SECONDARY
SONY
1-675-498-11
CN601
CN602
CN603
CN604
CN605
CN606
CN607
CN801
CN803
CN302
CN305
CN306
IC601
IC602
IC603
IC605
IC606
IC607
IC609
IC610
IC611
PFC
STB
CHECK
THP601
J401
T602
T604
PH602
PH603
CP101
TP601
TP602
RY602
RY603
TU101
TU102
CLP2
CLP3

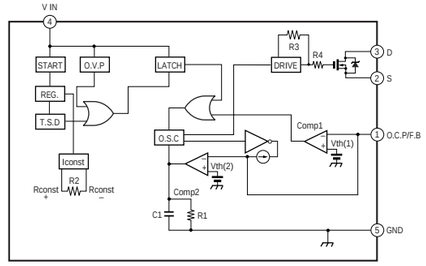

TO MA10 (1/3) BOARD CN001
CN301 35P
SSCP
HSYNC O (TV)
HSYNC I (REC)
FRGB
VM SW
POS/NEG (VCR)
POS/NEG (CTV)
AUTO-AGC
DGC SW
VPS ON
VCR PWR
CRT PWR
VPULSE
HPULSE
NS CTL
OVP
SCL1
SDA1
YM/YS
MODE
OSD B
OSD G
OSD R
BINT
SP AUDIO
TEXT VIDEO
PB V
GND (A)
FR LINE A
GND FR V
FR LINE V
GND
VCR A
VCR V
J401 21P
CP101
TU101 * (FOR VTR)
TU102 * (FOR TV)
AGC
AS
SCL
SDA
+33V
L/L'
NEG/POS
GND
+5V
AM
OSS
VIDEO
NC
CN604 :TAB
GND
D102 UDZS-TE-17-5.6B
D103 UDZS-TE-17-5.6B
D101 DAN202K-T-146
D611 HZT33-02TA
33V STBY
IC401 CXA1855Q-T6
A/V SW
FRONT V IN
FRONT A IN
VCR V IN
VCR A IN
TUA 0
TUV 0
TUA 1
TUV 1
VCC
BIAS
V OUT
SP OUT
GND
AV V IN
AV A IN
AV A OUT
AV V OUT
VCR V OUT
VCR A OUT
SCL
SDA
ADR
Q102 2SA1037K-T-146-QR BUFFER
Q101 2SA1037K-T-146-QR BUFFER
Q403 2SC2412K-T-146-QR BUFFER
Q401 2SA1037K-T-146-R BUFFER
Q402 2SC2412K-T-146-R MUTE
Q404 2SB709A-QRS-TX BUFFER
Q405 2SC2412K-T-146-R BUFFER
Q603 2SA1037K-T-146-QR REG SW
VIDEO (TV)
VIDEO (REC)
AUDIO (TV)
AUDIO (REC)
AUDIO
VIDEO
AUDIO (REC)
VIDEO (REC)
AUDIO (PB)
VIDEO (PB)
TO MA10 (1/3) CN100
D 5V
GND (A)
SW 5V
GND (M)
L603 10µH LHL08
L403 4.7µH EL0606
L401 100µH EL0606
D404 MTZJ-T-77-6.8A
D409 MTZJ-T-77-13
D410 MTZJ-T-77-6.2
D411 MTZJ-T-77-6.2
D406 MTZJ-T-77-9.1C
D407 MTZJ-T-77-6.8A
D414 MTZJ-T-77-6.8A
D412 MTZJ-T-77-6.8A
D413 MTZJ-T-77-6.8A
D408 MTZJ-T-77-9.1C
D495 MTZJ-T-77-9.1C
D401 UDZS-TE17-9.1B
D637 MTZJ-T-77-4.3B
D622 1SS119-25TD
D638 1SS119-25TD
D604 1SS119-25TD
IC609 PQ30RV11 9V REG
IC610 PQ30RV11 5V REG
IC604 PQ30RV11 6V REG
D623 MA111-TX
D639 MTZJ-T-77-8.2C
9V STBY
6V STBY
5V STBY
TH601
D602 D2SBA60F
D613 UDZ-TE-17-16B
D626 ERA22-08TP3 DUMPER
Q605 2SK2733 POWER SWITCHING
D631 MA111-TX
D621 D1NL20U-TA2 RECT
D616 D1NL20U-TR2 RECT
D635 D1NL20-TA RECT
D627 Q2S6MF 11+5V-RECT
T604
IC602 MC33364DR2 SW REG CONTROL
CN606
PFC
NC
PFC
56nH
ZC
LINE
CSENSE
V FB
A VCC
P VCC
V REF
G DRIVE
P GND
F CLAMP
R GND



ABOARD : IC501 LA7840L



ABOARD : IC606 STR-F6654



A BOARD ✱ MARK LIST

Ref No.	14inch model	21inch model
C303	—	10
C308	0.033 50V B:CHIP	0.47 16V B:CHIP
C801	0.015 200V :PT	0.01 400V :PT
C803	0.36 250V	0.47 250V
C806	100p 500V	100p 500V
C812	0.022 200V	0.033 250V
C813	4700p 25V SL:CHIP	0.0022 50V SL:CHIP
C817	470p 50V	JW(5)
C818	330p CH:CHIP	0.01 CH:CHIP
C820	0.022 200V :PT	0.047 200V :PT
C821	680p 2kV B	470p 2kV B
C824	5600p 1.2kV	9100p 1.2kV
C827	0.015 630V :PP	0.36 400V :PP
CN606	—	3P(3.3 10W)
D314	—	DAP202K-T-146
L802	1-419-551-11	1-419-552-11
L805	COIL,CHOKE(10MMH)	COIL,DRAM CORE
L808	COIL,CHOKE(1.5MMH)	COIL,WITH CORE
Q305	—	2SC2412K-T-146-R
R301	33k :CHIP	2.2k :CHIP
R306	—	10k :CHIP
R308	—	10k :CHIP
R311	—	10k :CHIP
R677	3.3 10W	—
R801	470k :RN-CP	330k :RN-CP
R802	27 2W :RS	47 2W :RS
R805	82k :RN	33k :RN
R808	82k 1/4W :RN	56k 1/2W :RN
R810	—	22k :RN-CP
R824	110k :RN-CP	100k :RN-CP
R830	39k :RN-CP	47k :RN-CP
R831	75k :RN-CP	510k :RN-CP
R832	10k :RN-CP	2.7k :RN-CP
R838	JW(15)	100 2W :RS
T801	NX-1912-M	1-453-314-11

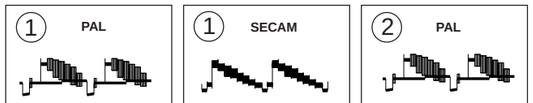
—: Not used

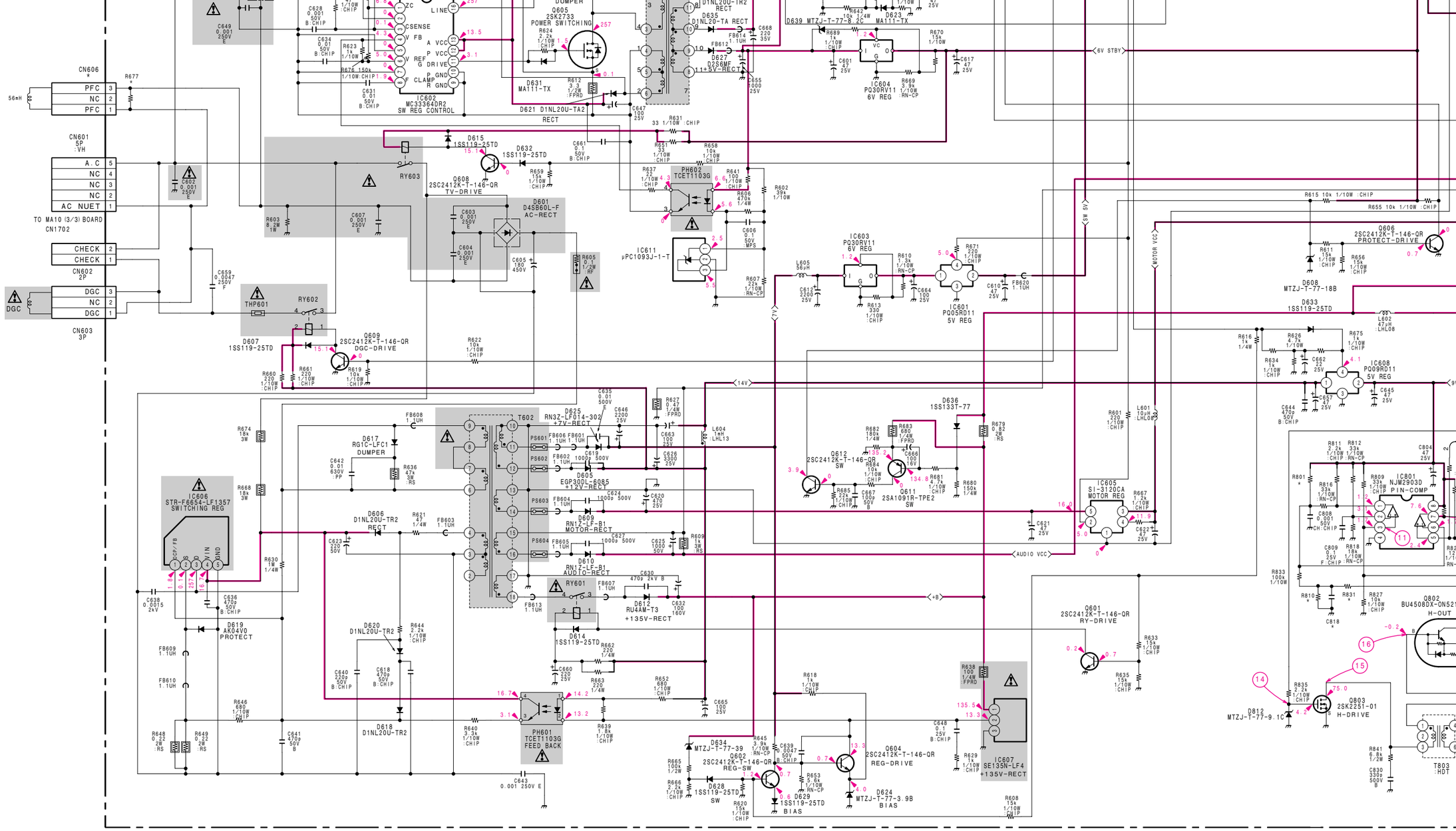
A BOARD ✱ MARK LIST

Ref No.	AEP/ESP model	FR model	UK model
TU101	BTF-EC402	BTF-EF412	BTF-EU602
TU102	BTF-EC402	BTF-EF412	BTF-EU602

—: Not used

A BOARD WAVEFORMS

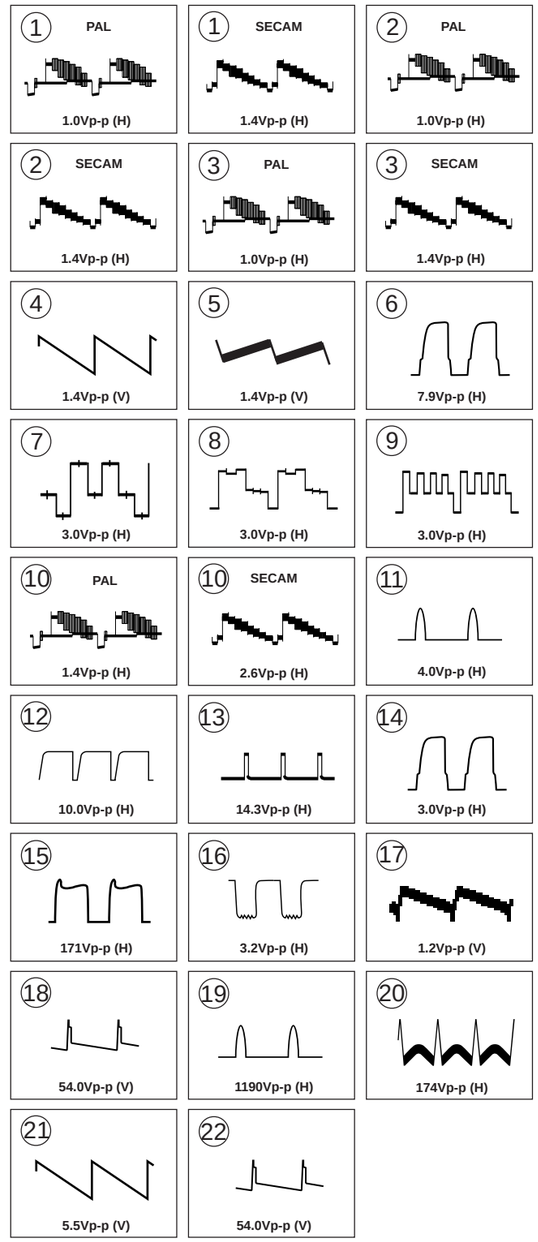



CN606
PFC
NC
PFC
CN601
5P
:VH
A.C
NC
NC
NC
AC NUET
TO MA10 (3/3) BOARD
CN1702
CHECK
CHECK
CN602
2P
DGC
NC
DGC
CN603
3P
IC602
MC33364DR2
SW REG CONTROL
IC606
STR-F6654-LF1357
SWITCHING REG
D605
2SK2733
POWER SWITCHING
D631
MA111-TX
D621 D1NL20U-TA2
RECT
D635
D1NL20-TA RECT
D627
D2S6MF
11+5V-RECT
D639 MTZJ-T-77-8.2C
MA111-TX
IC604
PQ30RV11
6V REG
6V STBY
D615
1SS119-25TD
D632
1SS119-25TD
Q608
2SC2412K-T-146-QR
TV-DRIVE
D601
D4SB60L-F
AC-RECT
RY603
PH602
TCET1103G
IC611
μPC1093J-1-T
IC603
PQ30RV11
6V REG
IC601
PQ05RD11
5V REG
5V SW
MOTOR VCC
Q606
2SC2412K-T-146-QR
PROTECT-DRIVE
D608
MTZJ-T-77-18B
D633
1SS119-25TD
L602
47uH
:LHL08
IC608
PQ09RD11
5V REG
THP601
RY602
D607
1SS119-25TD
Q609
2SC2412K-T-146-QR
DGC-DRIVE
14V
D625
RN3Z-LF014-302
+7V-RECT
T602
PS601
PS602
PS603
PS604
D605
EGP30DL-6085
+12V-RECT
D609
RN12-LF-B1
MOTOR-RECT
D610
RN11-LF-B1
AUDIO-RECT
D606
D1NL20U-TR2
RECT
D617
RG1C-LFC1
DUMPER
D619
AK04V0
PROTECT
D620
D1NL20U-TR2
D618
D1NL20U-TR2
RY601
D612
RU4AM-T3
+135V-RECT
D614
1SS119-25TD
PH601
TCET1103G
FEED BACK
D636
1SS133T-77
Q612
2SC2412K-T-146-QR
SW
Q611
2SA1091R-TPE2
SW
IC605
SI-3120CA
MOTOR REG
AUDIO VCC
+8
Q601
2SC2412K-T-146-QR
RY-DRIVE
D634
MTZJ-T-77-39
Q602
2SC2412K-T-146-QR
REG-SW
D628
1SS119-25TD
SW
Q604
2SC2412K-T-146-QR
REG-DRIVE
D624
MTZJ-T-77-3.9B
BIAS
D629
1SS119-25TD
BIAS
IC607
SE135N-LF4
+135V-RECT
IC801
NJM2903D
PIN-COMP
Q803
2SK2251-01
H-DRIVE
D812
MTZJ-T-77-9.1C
Q802
BU4508DX-ON52
H-OUT
T803
:HDT

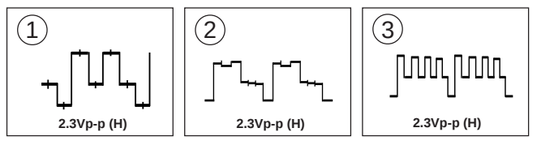
TU102	BTP-EC402	BTP-EF412	BTP-EG002

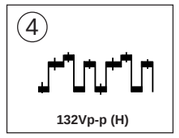
—: Not used

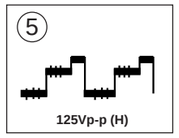
A BOARD WAVEFORMS

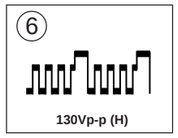


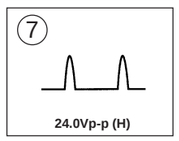
CVM BOARD WAVEFORMS

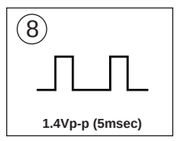




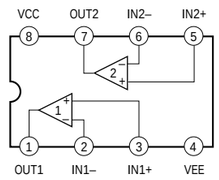


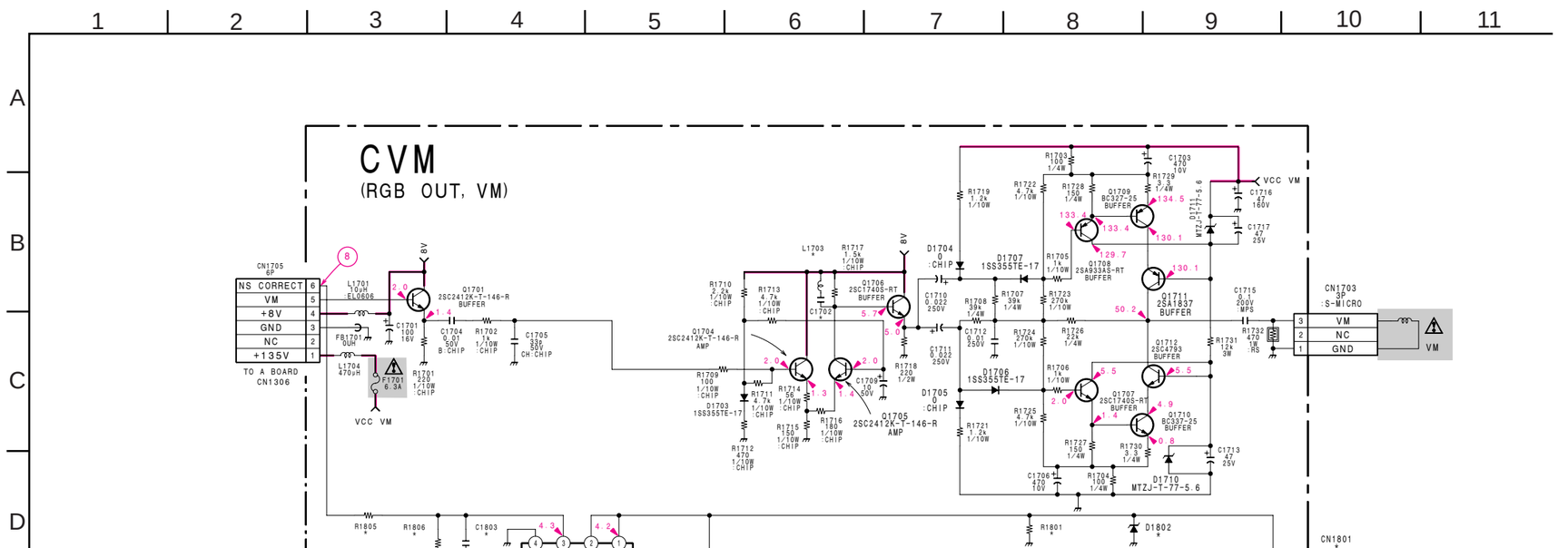






CVM BOARD : IC1801 M5216P



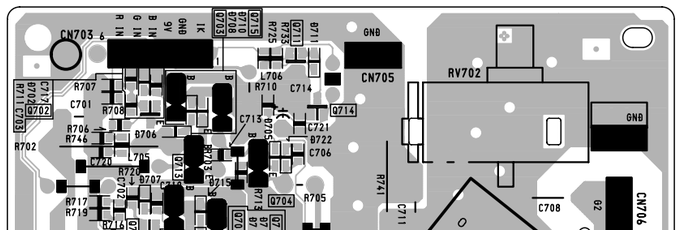


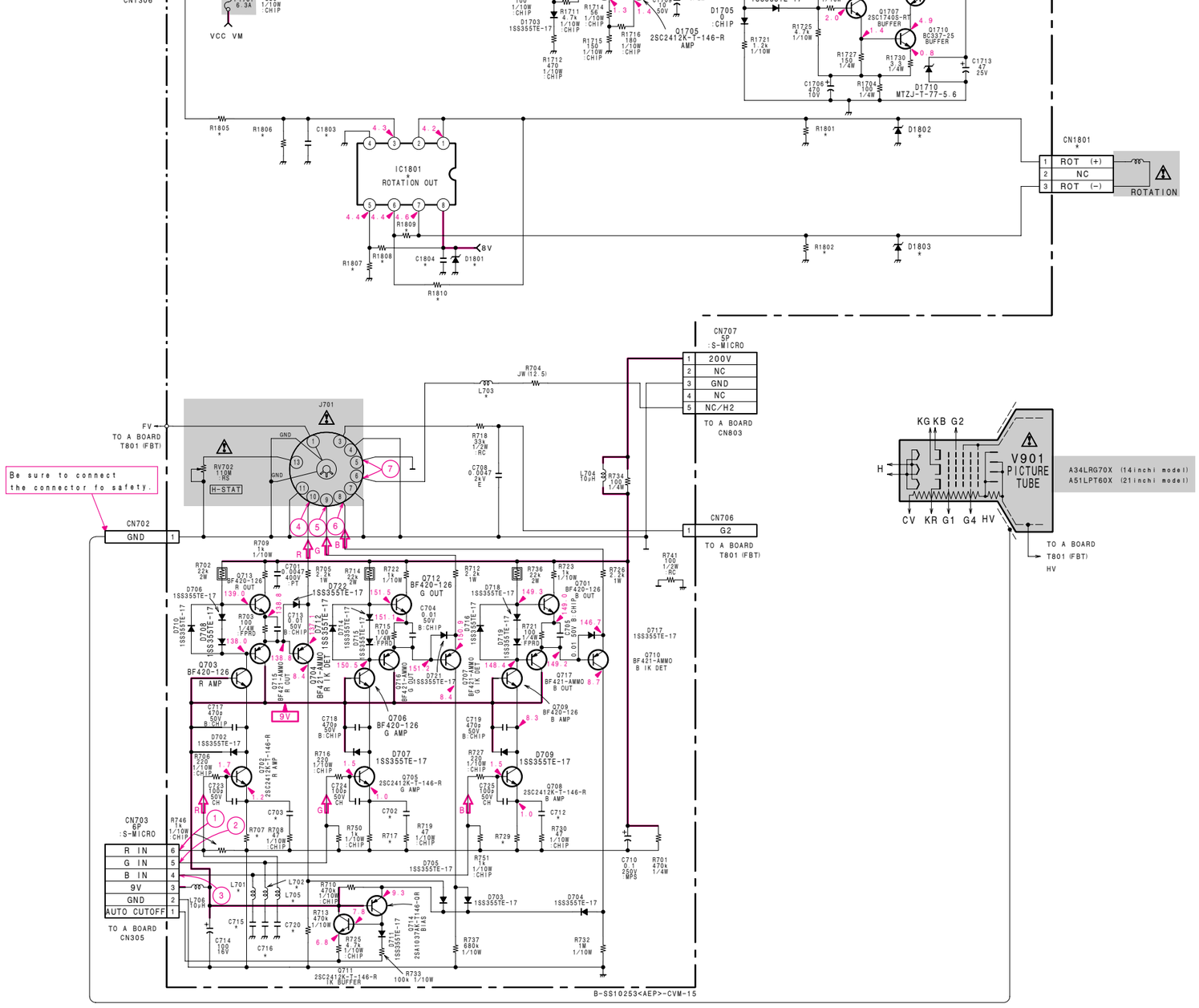
VIDEO section

CVM

[RGB OUT,VM]

– **CVM BOARD** –





Schematic diagram

A board

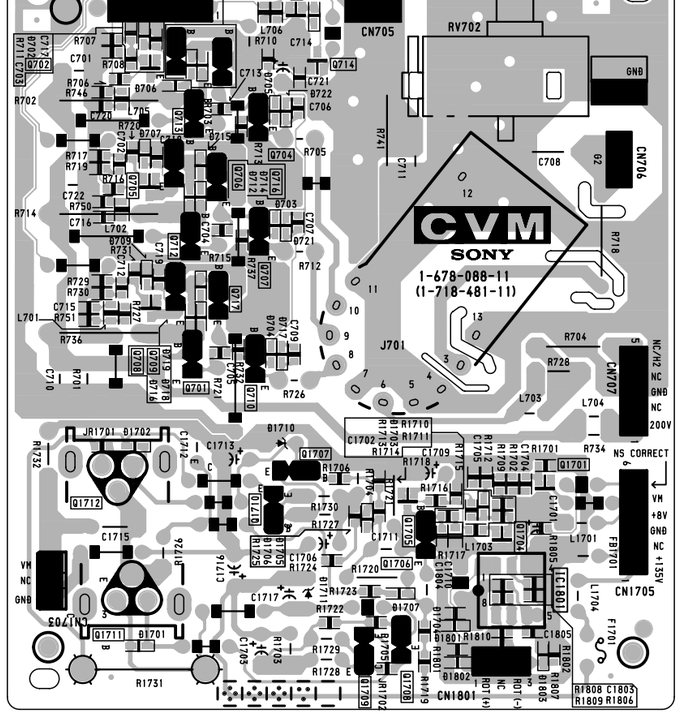
Schematic diagram

CVM board

CVM BOARD * MARK LIST

Ref No.	14inch model	21inch model
C702	100p CH:CHIP	150p CH:CHIP
C703	100p CH:CHIP	150p CH:CHIP
C712	100p CH:CHIP	150p CH:CHIP
C715	—	68p CH:CHIP
C716	—	68p CH:CHIP
C720	—	68p CH:CHIP
C1702	—	22p CH:CHIP
C1803	—	0.022 B:CHIP
C1804	—	1 16V B:CHIP
CN1801	—	3P
D1801	—	UDZ-TE-1-10B
D1802	—	UDZ-TE-1-10B
D1803	—	UDZ-TE-1-10B
IC1801	—	M5216P
L701	—	4.7UH
L702	—	4.7UH
L703	27UH	47UH
L705	—	4.7UH
L1703	—	15UH
R707	560 :CHIP	390 :CHIP
R717	560 :CHIP	390 :CHIP
R729	560 :CHIP	390 :CHIP
R1801	—	1K :CHIP
R1802	—	1K :CHIP
R1805	—	10K :CHIP
R1806	—	680K :CHIP
R1807	—	10K :CHIP
R1808	—	10K :CHIP
R1809	—	10K :CHIP
R1810	—	10K :CHIP

—: Not used



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

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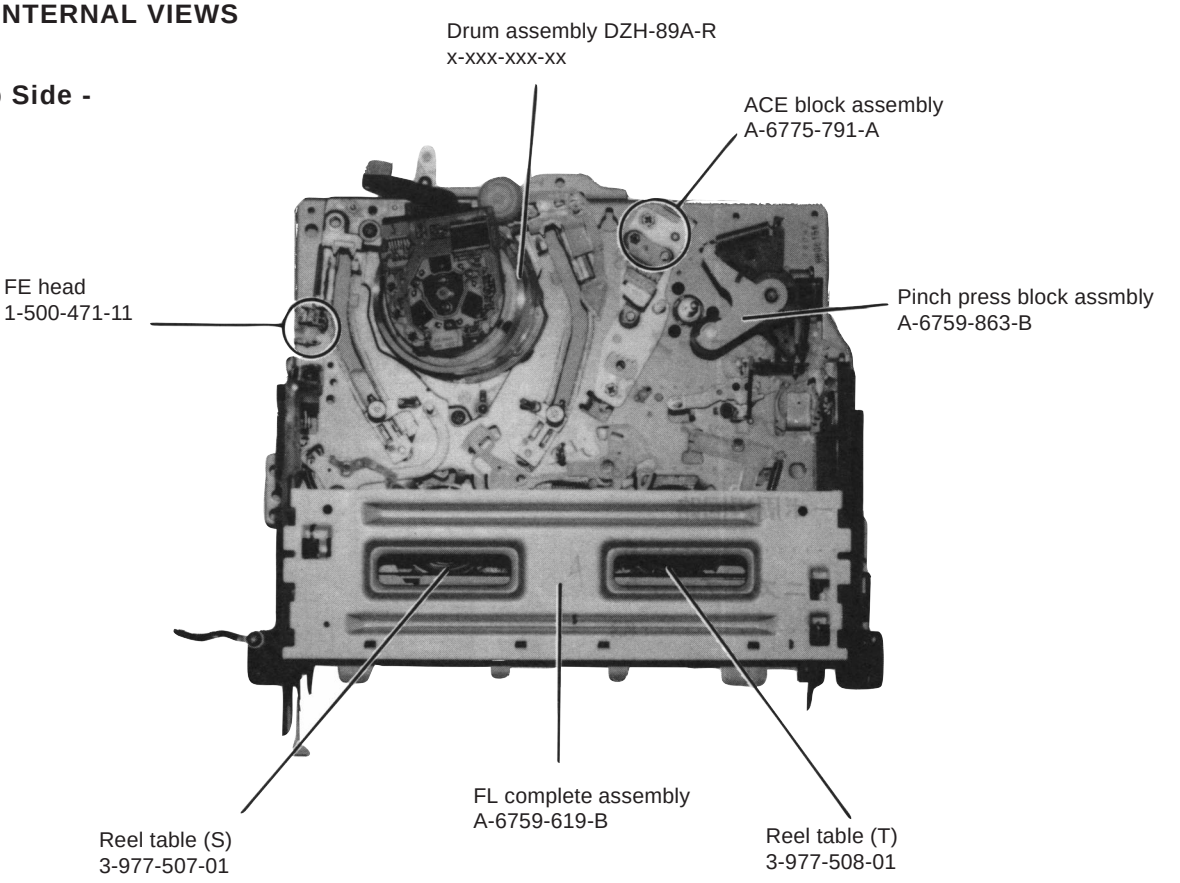
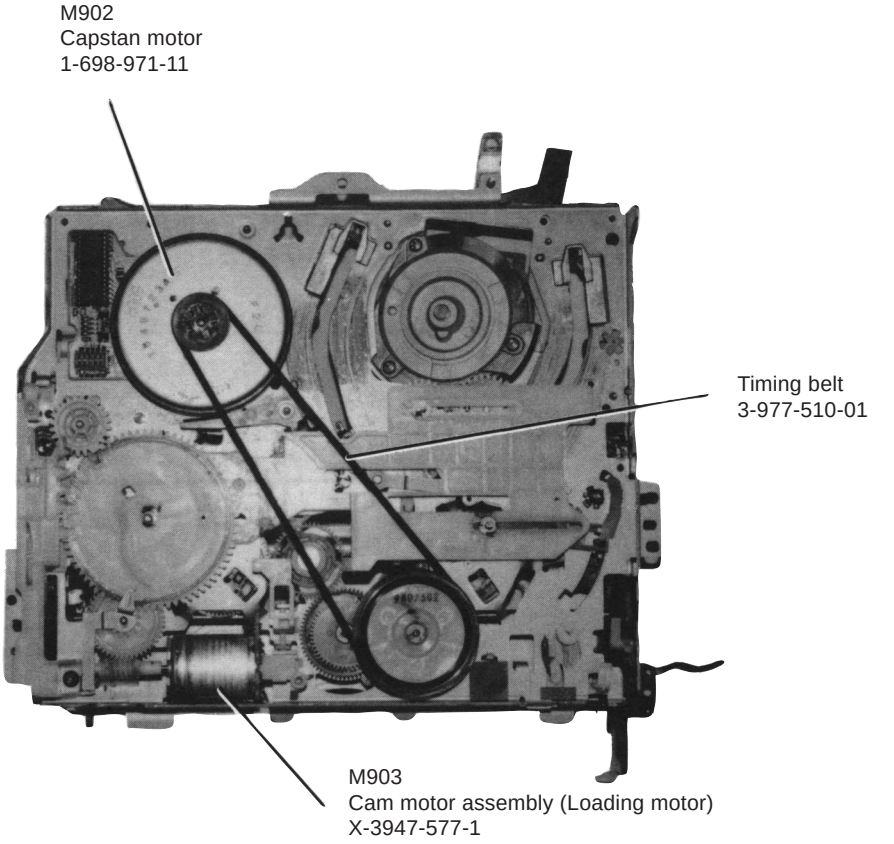
SECTION 1
GENERAL

1-1. INTERNAL VIEWS

- Top Side -

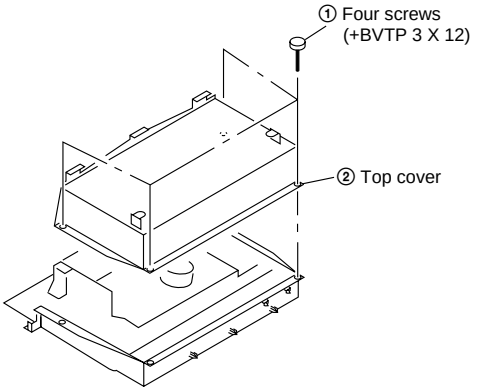


- Bottom Side -

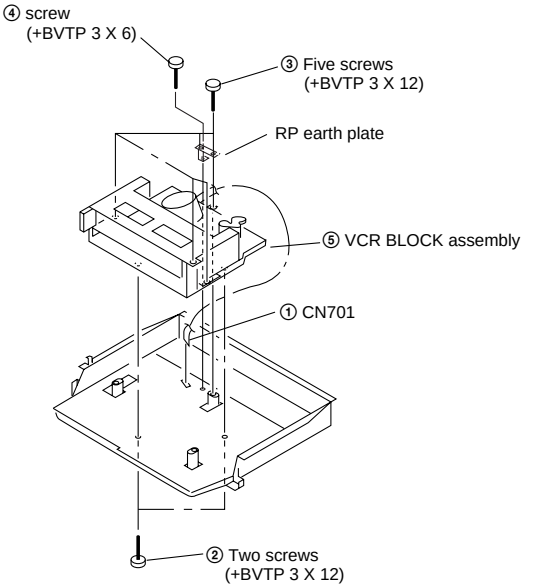


SECTION 2
DISASSEMBLY

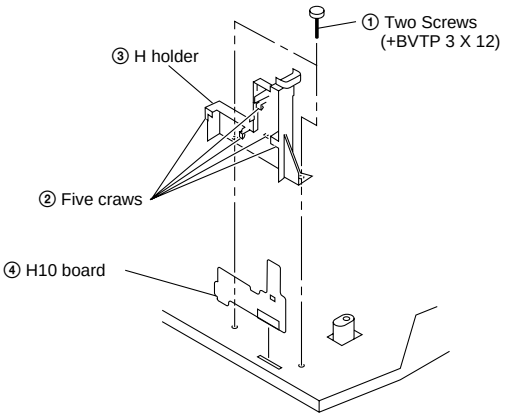
2-1. TOP COVER REMOVAL



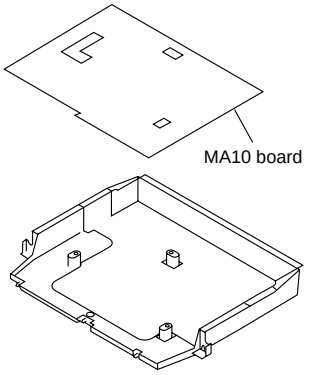
2-2. VCR BLOCK ASSY REMOVAL



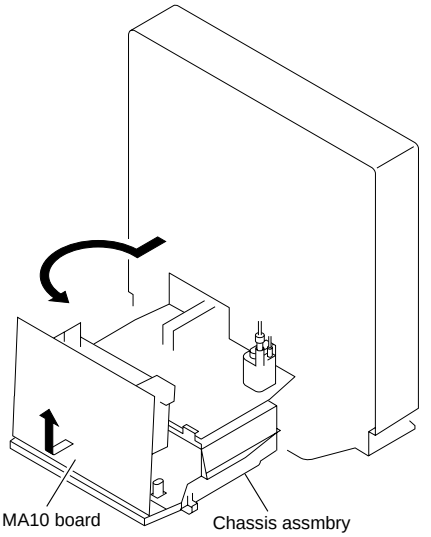
2-3. H10 BOARD REMOVAL



2-4. MA10 BOARD REMOVAL



2-5. SERVICE POSITION (MA10 BOARD)



SECTION 3
CIRCUIT ADJUSTMENTS

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

[INSTRUMENTS TO BE USED]

1) Color TV
2) Signal or dual trace type oscilloscope, band more than 30 MHz, delay, as provided.
3) Frequency counter (4 digits or more)
4) PAL pattern generater
5) Digital voltmeter
6) Audio level meter
7) Audio generator
8) Attenuator
9) Distortion meter
10) Alignment tape
    Part code : H7099052H (MH-2)

[CONNECTION]

Unless otherwise specified, connect and adjust the measurement equipment as follows.

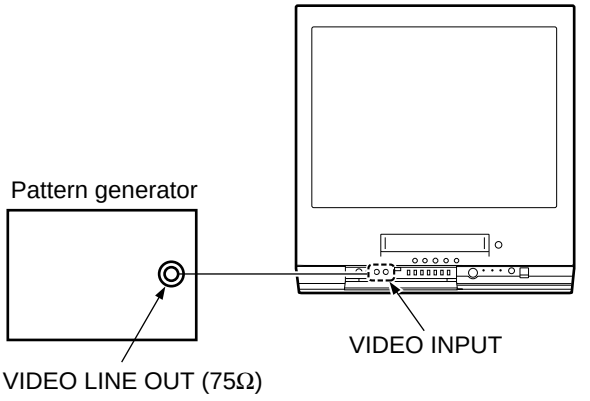


Fig.3-1

[SET-UP FOR ADJUSTMENT]

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscpe to the video input terminal on the MF 1 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3 V, respectively, and that the level ratio of the burst signal and “red siganl” are 0.30 : 0.66, Fig.3-2 shows video signals (color bars) used in adjusting the electrical adjustment.

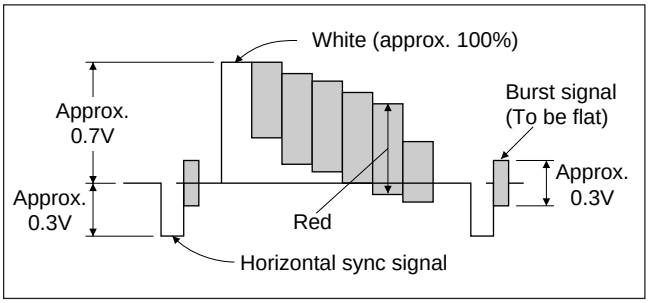


Fig.3-2

Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 minutes	Starir-step	6kHz
2	5 minutes	-	3kHz
3	10 minutes	Color bar	1kHz
4	3 minutes	RF sweep	-

[SPECIFIED INPUT/OUTPUT LEVEL IMPEDANCE]

Input/Output terminal

Video input	Pin jack
	Input signal : 1Vp-p, 75 , unbalanced
	Sync negative
AUDIO LINE IN	Pin jack
	Input level : -7.5dBs
	(0dBs=0.775Vrms)
	Input impedance : More than 47k

X'tal OSC CHECK

Mode	PB
Signal	Alignment tape, Stair step
Measurement Point	MA10 board IC802 ⑤⑨pin(PAL)
Measurement Equipment	Oscilloscope
Specified Value	500±200mVp-p

Check: 1)Confirm the frequency is 4.433619MHz±100Hz(PAL).
2)Confirm the waveform amplitude is 500±200mVp-p.

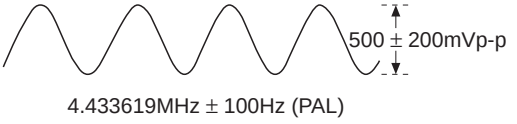


Fig.3-3

CARRIER DEVIATION CHECK

Mode	E-E
Signal	Color bar
Measurement Point	MA10 board IC802 ⑱pin
Measurement Equipment	Spectrum Analyzer
Specified Value	f_2-f_1=1.00±0.08MHz

Check: Confirm f_2-f_1=1.00±0.08MHz
Confirm f_1=3.80±0.13MHz(PAL)

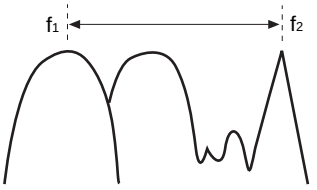


Fig.3-5

SYNC AGC CHECK

Mode	E-E
Signal	Color bar
Measurement Point	MA10 board Q830 emitter
Measurement Equipment	Oscilloscope
Specified Value	1.0±0.1Vp-p

Check: Confirm the waveform amplitude is 1.0±0.1Vp-p.

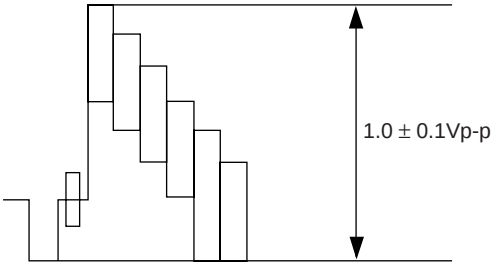


Fig.3-4

WHITE/DARK CLIP CHECK

Mode	E-E
Signal	Color bar
Measurement Point	MA10 board IC802 ㊲pin
Measurement Equipment	Oscilloscope
Specified Value	190±20%(White), 55±20%(Dark)

Preparation: Add 3.3k r esistor between IC802 ㊷pin and GND.

Check: Taking the height from sync to white level as 100%, check white clip and dark clip.

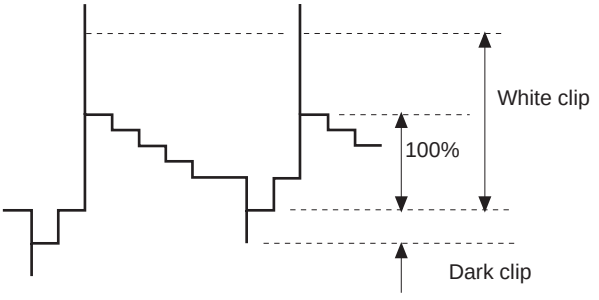


Fig.3-6

REC Y LEVEL CHECK

Mode	E-E(SP)
Signal	No signal
Measurement Point	MA10 board IC802 ⑱pin
Measurement Equipment	Oscilloscope
Specified Value	260±70mVp-p(PAL)

Check: Confirm the Vp-p of the waveform is 220±70mVp-p.

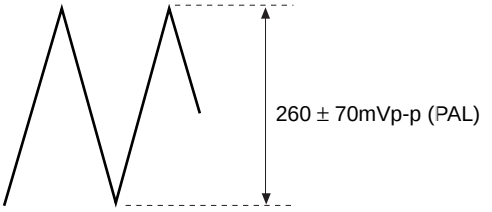


Fig.3-7

PB Y LEVEL CHECK

Mode	PB
Signal	Color bar
Measurement Point	MA10 board Q830 emitter
Measurement Equipment	Oscilloscope
Specified Value	1.0±0.1Vp-p

Check: Confirm the Vp-p of the waneform is 1.0±0.1Vp-p.

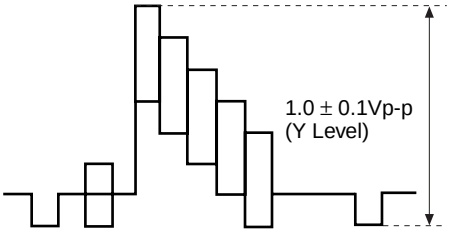


Fig.3-9

REC CHROMA CHECK

Mode	REC(SP)
Signal	Color bar
Measurement Point	MA10 board IC802 ⑭pin
Measurement Equipment	Oscilloscope
Specified Value	350±60mVp-p(PAL)

Check: Confirm the Vp-p of the waveform is 350±60mVp-p.

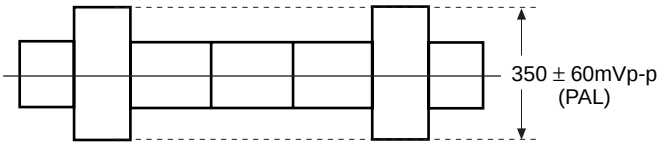


Fig.3-8

HALF H SHIFT CHECK

Mode	EE
Signal	No signal
Measurement Point	MA10 board IC802 ⑱pin
Measurement Equipment	Spectrum Analyzer
Specified Value	8.2±2kHz

Check: Confirm the 1/2fH of the waveform is 8.2±2kHz.

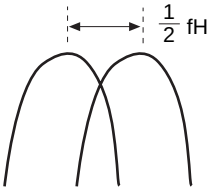


Fig.3-10

SECTION 4

INTERFACE, IC PIN FUNCTION DESCRIPTION

4-1. µ-COM PORT FUNCTION DESCRIPTION (MA10 BOARD IC001)

Pin No.	Signal	I/O	Function
1	S SEL F	I	S-INPUT SELECT (FRONT)
2	$\overline{\text{S SEL R}}$	I	S-INPUT SELECT (REAR)
3	ST	I	TU STEREO MODE
4	BIL	I	TU BILINGUAL MODE
5	DGC SW	–	DGC ON/OFF CONTROL
6	ST/ $\overline{\text{MONO}}$	I	SET MODE STEREO/$\overline{\text{MONO}}$
7	–	–	
8	$\overline{\text{MAIN}}$ /SUB	O	TU $\overline{\text{MAIN}}$/SUB CONTROL
9	F MONO	O	TU FOCE MONO CONTROL
10	VM SW	O	VM ON/OFF CONTROL
11	GP A	I	"REC PON" SW A
12	GP B	I	"REC PON" SW B
13	GP C	I	"REC PON" SW C
14	ASURA CS	O	CHIP SELECT FOR ASURA
15	$\overline{\text{SLAVE RESE}}$	O	RESET FOR ASURA
16	$\overline{\text{J CLK}}$	O	JUST CLOCK DISABLE ("H" : DISAB)
17	$\overline{\text{FACT}}$	I	FACTORY MODE
18	$\overline{\text{1TU}}$ /2TU	I	SET MODE $\overline{\text{1TU}}$/2TU
19	JUST CLOCK	I	JUST CLOCK DET INPUT
20	SIRCS	I	REMOCON SIGNAL IN
21	HSYNC 1	I	H SYNC DET INPUT (REC)
22	HSYNC 0	I	H SYNC DET INPUT (TV)
23	SI	I	SIGNAL DATA INPUT
24	SO	O	SIGNAL DATA OUTPUT
25	SCK	O	SIGNAL CLOCK OUTPUT
26	Vss	–	
27	B INT	I	BUS INT
28	X TAL	–	
29	EXTAL	–	
30	$\overline{\text{RESET}}$	–	
31	A MUTE	O	AUDIO MUTE
32	CLK OS	O	CHIP SELECT FOR RT CLOCK
33	KEY2	I	KEY SCAN 2
34	KEY1	I	KEY SCAN 1
35	AFT1	I	AFT DET 1
36	AFT0	I	AFT DET 0
37	OVP	I	OVP DET
38	G SW	I	"REC PON" SW
39	XLC	–	
40	EXLC	–	
41	OSD R	–	
42	OSD G	–	
43	OSD B	–	
44	I	–	
45	YS	–	
46	YM	–	
47	SDA1	O	1^2C BUS DATA FOR YCJ etc
48	SDA0	O	1^2C BUS DATA FOR NVM
49	SCL1	O	1^2C BUS CHECK FOR YCJ etc
50	SCL0	O	1^2C BUS CHECK FOR NVM
51	$\overline{\text{LED2}}$	O	POWER LED
52	$\overline{\text{LED1}}$	O	STBY LED
53	NS	O	NS COIL CONTROL (PWM)
54	VOL	O	VOLUME CONTROL (PWM)
55	MP	–	
56	NC	–	
57	Vdd	–	
58	Vss	–	
59	HPULSE	I	
60	VPULSE	I	
61	CRTPOW	O	CRT POWER ON
62	VCRPOW	O	VCR POWER ON
63	$\overline{\text{M SW}}$	I	MAIN SW
64	SP MUTE	O	SPEAKER MUTE

4-2. SYSTEM CONTROL-VIDEO BLOCK INTERFACE (MA10 BOARD IC402)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
RF SW P (SW30)	IC402 ①	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
Q VD	IC402 ④	O	L	L	L	L	L	*2	*3	*3	*3	*3	*3	L	L
$\overline{\text{V SYNC}}$	IC402 ⑯	I	*4	*4	*4	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5

*1. 30Hz 50% duty pulse synchronizing with drum rotation.
*2. Normally “L” . “H” when the video signal is not detected.
*3. V period “H” pulse.
*4. “H” in the LP mode. Selected according to the recording mode.
*5. Selected according to the tape recording mode.

4-3. SYSTEM CONTROL-SERVO PERIPHERAL CIRCUIT INTERFACE (MA10 BOARD IC402)

Signal	Pin No.	I/O	STOP	FF	REW	TAPE THREADING	TAPE UNTHREADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
REC CTL	IC402 ⑦	O	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	*1	HI-Z
$\overline{\text{CAP STOP}}$	IC402 ㉞	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)
STEP PLS	IC402 ㊾	O	L	L	L	L	L	L	L	*2	L	L	L	L	L
$\overline{\text{PB CTL}}$	IC402 ⑰	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H
DRUM PG	IC402 ⑱	I	*4	*1	*1	*5	*5	*1	*1	*1	*1	*1	*1	*1	*1
DRUM FG	IC402 ⑲	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7
CAP FG	IC402 ⑳	I	H/L	*6	*6	*5	*5	*6	H/L	*2	*6	*6	*6	*6	H/L
CAP DA	IC402 ㉓	O	*8	*8	*8	*8	*8	*9	*8	*8	*9	*9	*9	*9	*8
DRUM DA	IC402 ㉔	O	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10	*10
CTL RESET	IC402 ⑩	I/O	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	*11	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z

*1. 30Hz 50% pulse.
*2. Pulse in tape running.
*3. Reverse logic pulse of STEP PLS.
*4. “L” when drum rotation stops.
*5. Unstable period pulse.
*6. Pulse of Period proportionate to tape speed.
*7. 360Hz pulse.
*8. Pulse in tape running.
*9. Approx. 2 msec. period “H” or “L” pulse.
*10. Approx. 1.5 msec. period “H” or “L” pulse.

4-4. SYSTEM CONTROL-MECHANISM BLOCK INTERFACE (MA10 BOARD IC402)

Signal	Pin No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOADING	TAPE THREADING	TAPE UNTHREADING	STOP	FF	REW	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
CAM UN LOAD	IC402 ⑨	O	HI-Z	H	L	H	L	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
CAM LOAD	IC402 ⑧	O	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
MODE 1	IC402 ㉒	I	H	L	L	*1	*1	H	H	H	H	H	H	H	H	L	H	H
MODE 2	IC402 ㉑	I	H	L	L	*1	*1	H	H	H	L	L	L	L	L	L	L	L
MODE 3	IC402 ⑳	I	L	L	L	*1	*1	H	L	L	L	L	L	L	L	H	L	L
MODE 4	IC402 ⑲	I	L	H	H	*1	*1	L	H	H	L	L	L	L	L	L	L	L
C IN REC PRF	IC402 ⑰	I	L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
T REEL FG	IC402 ㊹	I	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
S REEL FG	IC402 ㊸	I	H/L	H/L	H/L	*3	*3	H/L	*3	*3	*3	H/L	*3	*3	*3	*3	*3	H/L
T/S LED	IC402 ㉟	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4	*4
$\overline{\text{CAP STOP}}$	IC402 ㉞	O (O.D)	L	L	L	H	H	L	H	H	H	L	*5	H	H	H	H	L
$\overline{\text{CAP RVS}}$	IC402 ㉜	O	L			H	L	H/L	H	L	H	H	H/*5	H	H	L	H	H
T SENS	IC402 ㉛	I	*4	*4	*4	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
S SENS	IC402 ㉜	I	*4	*4	*4	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6

*1. Uncertainty.
*2. “L” when the erasing protection tab is bent, “H” when not bent.
*3. Pulse of period proportionate to reel rotation speed.
*4. Apporx. 2 msec. period “H” pulse.
*5. Pulse in tape running.
*6. Normally “L”. 2 msec. period “H” pulse when tape top or tape end is detected.
*7. “L” when unloading to switchover. “H” when loading. “HI-Z” when CAM motor is stop.

4-5. SYSTEM CONTROL-SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA10 BOARD IC402)

Signal	Pin No.	I/O	Function
$\overline{\text{ASURA RESET}}$	IC402 ㊵	I	Normally "H"."L"when service interruption is detected or restored.
$\overline{\text{ASURA CS}}$	IC402 ㊹	I	Chip select signal from the timer microprocessor. V period “L” pulse.
S IN 0	IC402 ㊺	I	Serial communication data from the timer microprocessor. V period “L” pulse.
S OUT 0	IC402 ㊻	O	Serial communication data to the timer microprocessor. V period “L” pulse.
$\overline{\text{S CLK}}$	IC402 ㊼	I	Serial communication clock with the timer microprocessor. V period “L” pulse.

4-6. SYSTEM CONTROL-AUDIO BLOCK INTERFACE (MA10 BOARD IC402)

Sigmal	Pin No.	I/O	STOP	FF	REW	TAPE LOADING	TAPE UNLOADING	PB	PB · PAUSE	SLOW	X2	PICTURE SEARCH CUE	PICTURE SEARCH REVIEW	REC	REC · PAUSE
A MUTE	IC402 ㊾	O (O.D)	L	L	L	L	L	*1	H	H	H	H	H	L	L

*1. 30Hz 50% duty pulse approximately 5 msec. delayed from RF SW P.

4-7. SERVO/SYSTEM CONTROL PORT FUNCTION DESCRIPTION (MA10 BOARD IC402)

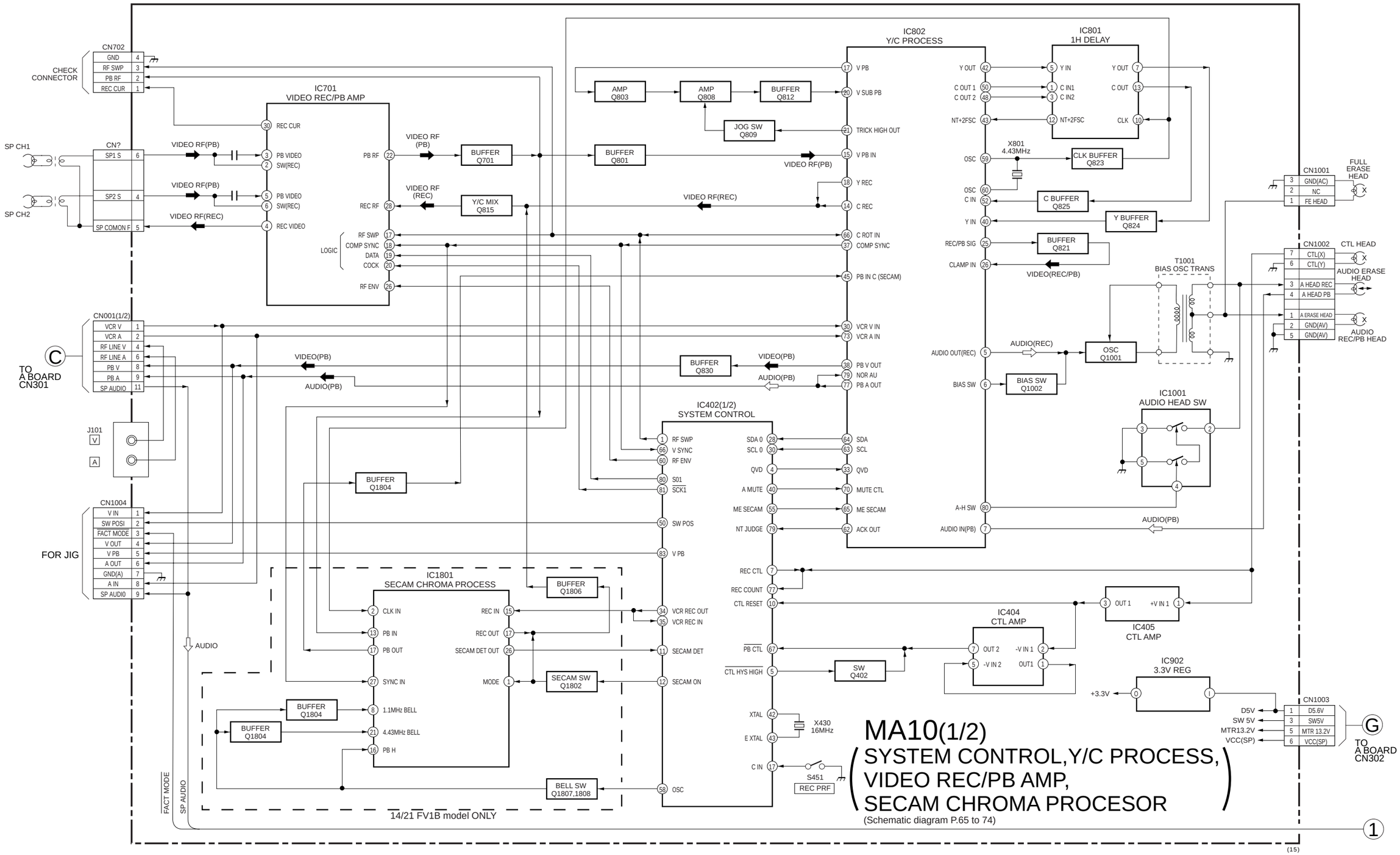
Pin No.	Signal	I/O	Function
1	RF SWP	O	RF SWITCHING PULSE
2	–	–	
3	–	–	
4	QVD	O	QUASI VD
5	CTLHYS HIGH	O	CTL CONTROL
6	–	–	
7	REC CTL	O	REC CTL SIGNAL
8	CAM LOAD	O	CAM LOADING
9	CAM UNLOAD	O	CAM UNLOADING
10	CTL RESET	O	CTL CONTROL
11	–	–	
12	–	–	
13	–	–	
14	–	–	
15	–	–	
16	–	–	
17	C IN	I	CASSETTE IN
18	–	–	
19	MODE4	I	MD MODE DET
20	MODE3	I	MD MODE DET
21	MODE2	I	MD MODE DET
22	MODE1	I	MD MODE DET
23	LED6	O	REC PON LED
24	LED5	O	ON TIMER LED
25	LED4	O	REC LED
26	LED3	O	TIMER REC LED
27	–	–	
28	SDA	I/O	I²C BUS DATA FOR VIDEO/HiFi
29	–	–	
30	SCL	O	I²C BUS CLOCK FOR VIDEO/HiFi
31	–	–	
32	–	–	
33	GND	O	
34	CAP STOP	O	
35	T/S LED	O	T/S LED CONTROL
36	GND	O	
37	GND	O	
38	GND	O	
39	MP	–	
40	ASURA RESET	–	
41	Vss	–	
42	XTAL	–	
43	EXTAL	–	
44	ASURA CS	I	ASURA u-COM CHIP SELECT
45	S IN 0	I	SERIAL DATA IN
46	S OUT 0	O	SERIAL DATA OUT
47	S CLK	I	SERIAL CLOCK
48	GND	O	
49	MUTE	O	AUDIO MUTE
50	POS	I	SWITCHING POSITION ADJ MODE

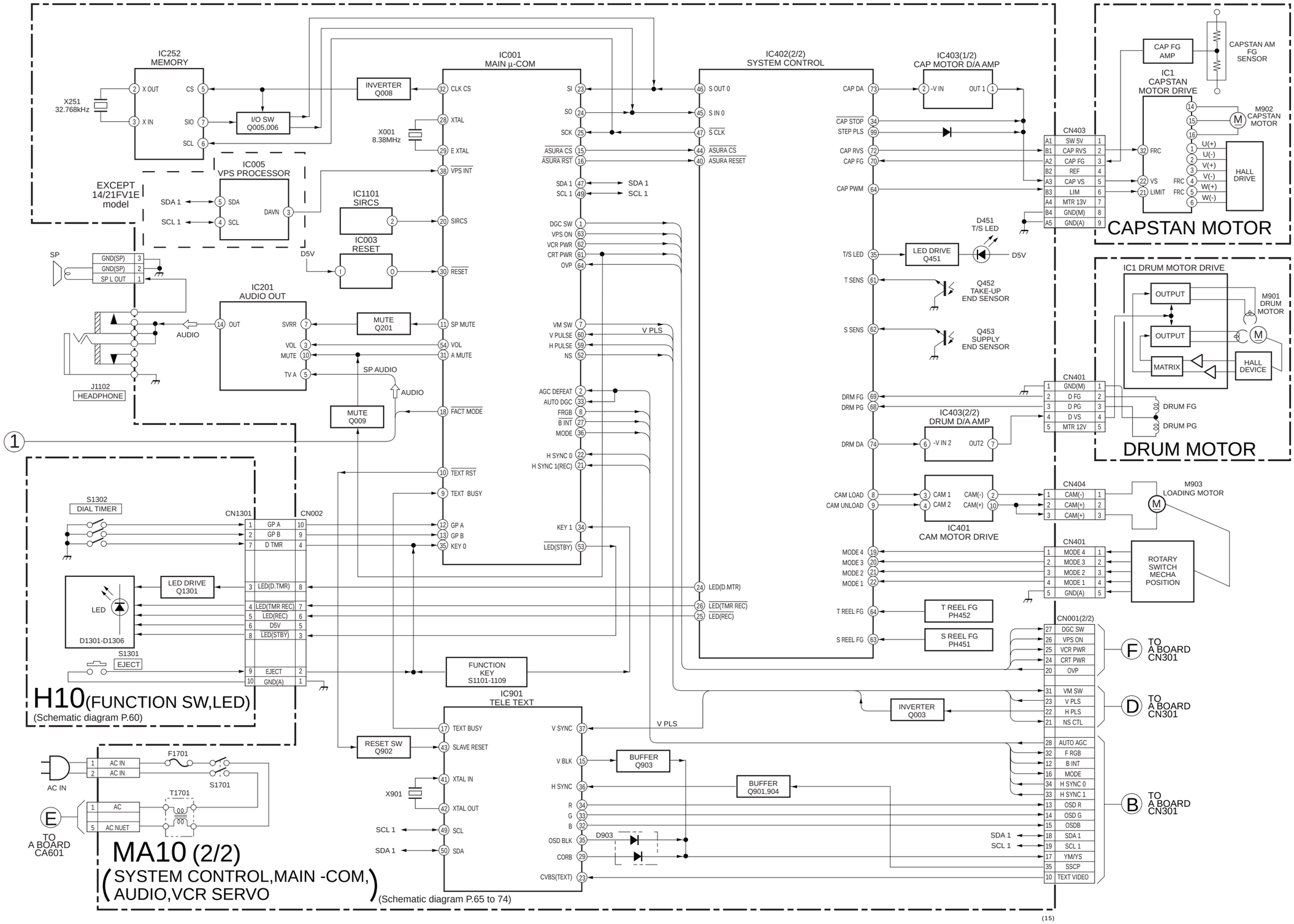
Pin No.	Signal	I/O	Function
51	GND	O	
52	AVss	–	
53	AV ref	–	
54	AVdd	–	
55	SECAM/SVHS	I	SVHS DET IN
56	GND	O	
57	DEW	I	DEW SENSOR
58	GND	O	
59	–	–	
60	RF ENV	I	VIDEO RF ENVELOPE DET
61	T SENS	I	TAPE TOP SENSOR
62	S SENS	I	TAPE END SENSOR
63	SREEL FG	I	S-REEL FG
64	TREEL FG	I	T-REEL FG
65	GND	O	
66	VSYNC	I	V SYNC SIGNAL IN
67	PB CTL	I	PB CTL SIGNAL
68	DRM PG	I	DRUM PG
69	DRM FG	I	DRUM FG
70	CAP FG	I	CAPSTAN FG
71	–	–	
72	CAP RVS	O	CAPSTAN REVERSE
73	CAP DA	O	CAPSTAN D/A OUTPUT
74	DRM DA	O	DRUM D/A OUTPUT
75	JOG	O	JOG CONTROL
76	S VHS	O	S VHS DET OUT
77	REC COUNT	I	REC CTL COUNT
78	–	–	
79	–	–	
80	SO 1	O	SERIAL DATA OUTPUT FOR RP AMP
81	SCK1	O	SERIAL CLOCK FOR RP AMP
82	GND	O	
83	V PB	O	VIDEO PB MODE
84	CAP PWM	O	CAPSTAN
85	–	–	
86	–	–	
87	–	–	
88	Vss	–	
89	Vdd	–	
90	–	–	
91	–	–	
92	–	–	
93	–	–	
94	–	–	
95	–	–	
96	–	–	
97	–	–	
98	–	–	
99	STEP PLS	O	
100	–	–	

SECTION 5
DIAGRAMS

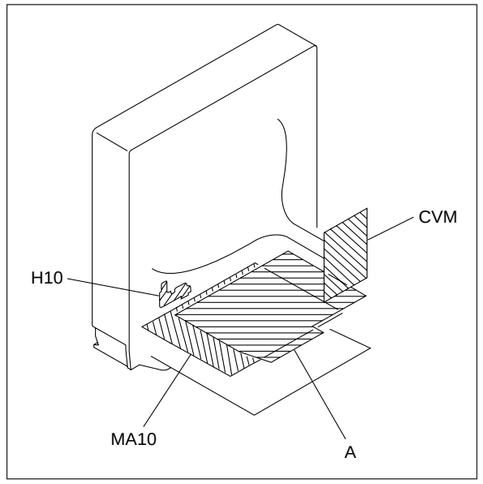
5-1. BLOCK DIAGRAMS

VIDEO BLOCK




IC252
MEMORY
X251
32.768kHz
X OUT
X IN
CS
SIO
SCL
I/O SW
Q005,006
INVERTER
Q008
IC001
MAIN µ-COM
CLK CS
XTAL
X001
8.38MHz
E XTAL
VPS INT
SIRCS
RESET
SP MUTE
VOL
A MUTE
FACT MODE
TEXT RST
TEXT BUSY
GP A
GP B
KEY 0
LED(D.TMR)
LED(TMR REC)
LED(REC)
D5V
LED(STBY)
EJECT
GND(A)
SI
SO
SCK
ASURA CS
ASURA RST
SDA 1
SCL 1
DGC SW
VPS ON
VCR PWR
CRT PWR
OVP
VM SW
V PULSE
H PULSE
NS
AGC DEFEAT
AUTO DGC
FRGB
B INT
MODE
H SYNC 0
H SYNC 1(REC)
KEY 1
LED(STBY)
IC402(2/2)
SYSTEM CONTROL
S OUT 0
S IN 0
S CLK
ASURA CS
ASURA RESET
LED(D.MTR)
LED(TMR REC)
LED(REC)
IC403(1/2)
CAP MOTOR D/A AMP
CAP DA
-V IN
OUT 1
CAP STOP
STEP PLS
CAP RVS
CAP FG
CAP PWM
T/S LED
T SENS
S SENS
LED DRIVE
Q451
D451
T/S LED
D5V
Q452
TAKE-UP
END SENSOR
Q453
SUPPLY
END SENSOR
IC403(2/2)
DRUM D/A AMP
DRM DA
DRM FG
DRM PG
-V IN 2
OUT2
CAM LOAD
CAM UNLOAD
CAM 1
CAM 2
IC401
CAM MOTOR DRIVE
MODE 4
MODE 3
MODE 2
MODE 1
T REEL FG
S REEL FG
T REEL FG
PH452
S REEL FG
PH451
CN403
SW 5V
CAP RVS
CAP FG
REF
CAP VS
LIM
MTR 13V
GND(M)
GND(A)
CAP FG
AMP
CAPSTAN AM
FG
SENSOR
IC1
CAPSTAN
MOTOR DRIVE
FRC
VS
LIMIT
M902
CAPSTAN
MOTOR
U(+)
U(-)
V(+)
V(-)
W(+)
W(-)
HALL
DRIVE
CAPSTAN MOTOR
IC1 DRUM MOTOR DRIVE
OUTPUT
OUTPUT
MATRIX
HALL
DEVICE
M901
DRUM
MOTOR
DRUM FG
DRUM PG
DRUM MOTOR
CN401
GND(M)
D FG
D PG
D VS
MTR 12V
CN404
CAM(-)
CAM(+)
CAM(+)
M903
LOADING MOTOR
CN401
MODE 4
MODE 3
MODE 2
MODE 1
GND(A)
ROTARY
SWITCH
MECHA
POSITION
CN001(2/2)
DGC SW
VPS ON
VCR PWR
CRT PWR
OVP
VM SW
V PLS
H PLS
NS CTL
AUTO AGC
F RGB
B INT
MODE
H SYNC 0
H SYNC 1
OSD R
OSD G
OSDB
SDA 1
SCL 1
YM/YS
SSCP
TEXT VIDEO
F
TO
A BOARD
CN301
D
TO
A BOARD
CN301
B
TO
A BOARD
CN301
INVERTER
Q003
BUFFER
Q903
BUFFER
Q901,904
V PLS
IC901
TELE TEXT
V SYNC
V BLK
H SYNC
R
G
B
OSD BLK
CORB
CVBS(TEXT)
TEXT BUSY
SLAVE RESET
XTAL IN
XTAL OUT
SCL
SDA
RESET SW
Q902
X901
D903
SP
GND(SP)
GND(SP)
SP L OUT
AUDIO
OUT
SVRR
VOL
MUTE
TV A
SP AUDIO
AUDIO
MUTE
Q009
MUTE
Q201
IC201
AUDIO OUT
J1102
HEADPHONE
IC005
VPS PROCESSOR
EXCEPT
14/21FV1E
model
SDA
SCL
DAVN
IC1101
SIRCS
IC003
RESET
D5V
S1302
DIAL TIMER
CN1301
CN002
GP A
GP B
D TMR
LED DRIVE
Q1301
LED
D1301-D1306
S1301
EJECT
FUNCTION
KEY
S1101-1109
H10(FUNCTION SW,LED)
(Schematic diagram P.60)
AC IN
F1701
S1701
T1701
AC
AC NUET
TO
A BOARD
CA601
MA10 (2/2)
(SYSTEM CONTROL,MAIN -COM,
AUDIO,VCR SERVO)
(Schematic diagram P.65 to 74)
(15)

5-2. CIRCUIT BOARDS LOCATION



5-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF
  Capacitors without voltage indication are all 50V.
- All resistors are in ohms.
  k = 1000 , M = 1000k
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power: 1/4W(CHIP:1/10W)

- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-chassis.

- Readings are taken with a color-bar signal input.
- Readings are taken with a 10M digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
  no mark : REC/PB
  ( ) : REC
  < > : PB
- Circled numbers are waveform reference.
- : B + line
- : B – line.
- : signal path.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFRAMMABLE CARBON
	: FUSE	NONFRAMMABLE FUSIBLE
	: RW	NONFRAMMABLE WIREWOUND
	: RS	NONFRAMMABLE METAL OXIDE
	: RB	NONFRAMMABLE CEMENT
	: ※	ADJUSTMENT RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Terminal name of semiconductors in silk screen printed circuit (✻)

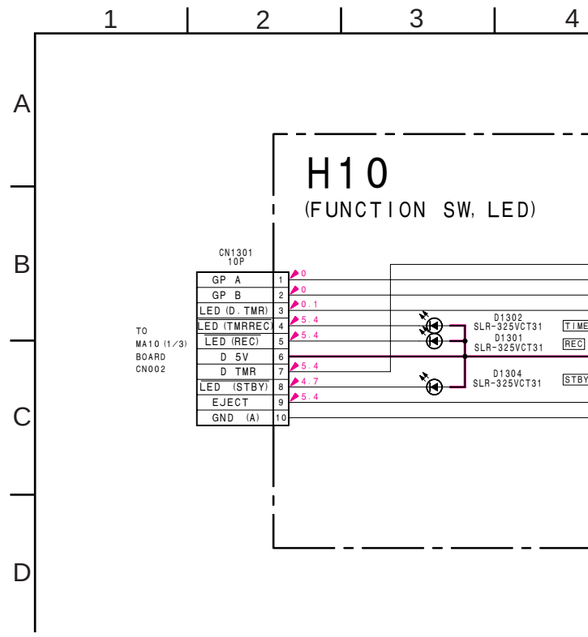
	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector Base Emitter	
②	Transistor	▬	Collector Base Emitter	
③	Diode	▯	Cathode — Anode	
④	Diode	T	Cathode Anode (NC)	
⑤	Diode	▬	Cathode Anode (NC)	
⑥	Diode	T	Common Anode Cathode	
⑦	Diode	▬	Common Anode Cathode	

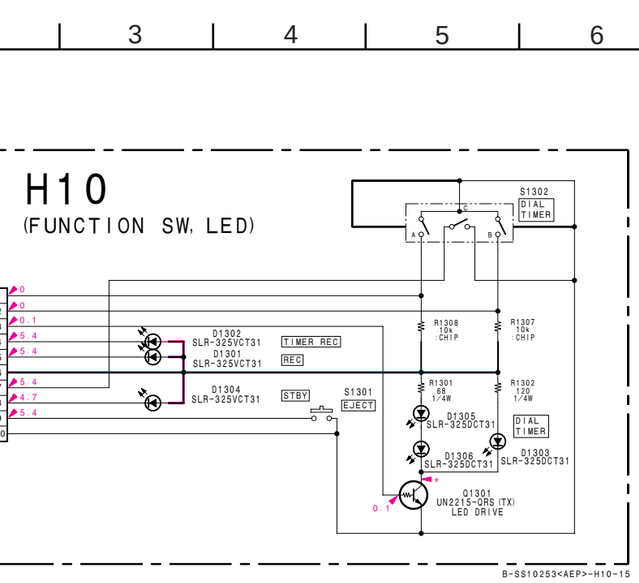
(Chip semiconductors that are not actually used are included.)

Ver.1.6

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part nummber specified.

**Note: Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.**

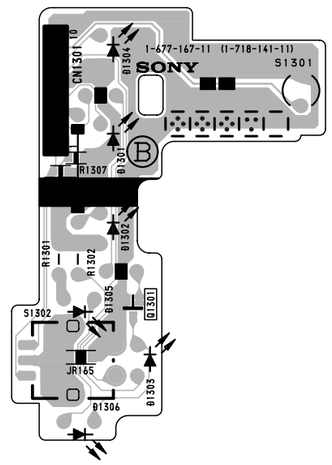




H10

[FUNCTION SW, LED]

– H10 BOARD –



MA10 (1/3)

[SYSTEM CONTROL, MAIN MICON
VCR SERVO, AUDIO]

MA10 (2/3)

[Y/C PROCESS, SECAM CHROMA PROCESS]

MA10 (3/3)

[AC IN, VIDEO REC/PB AMP]

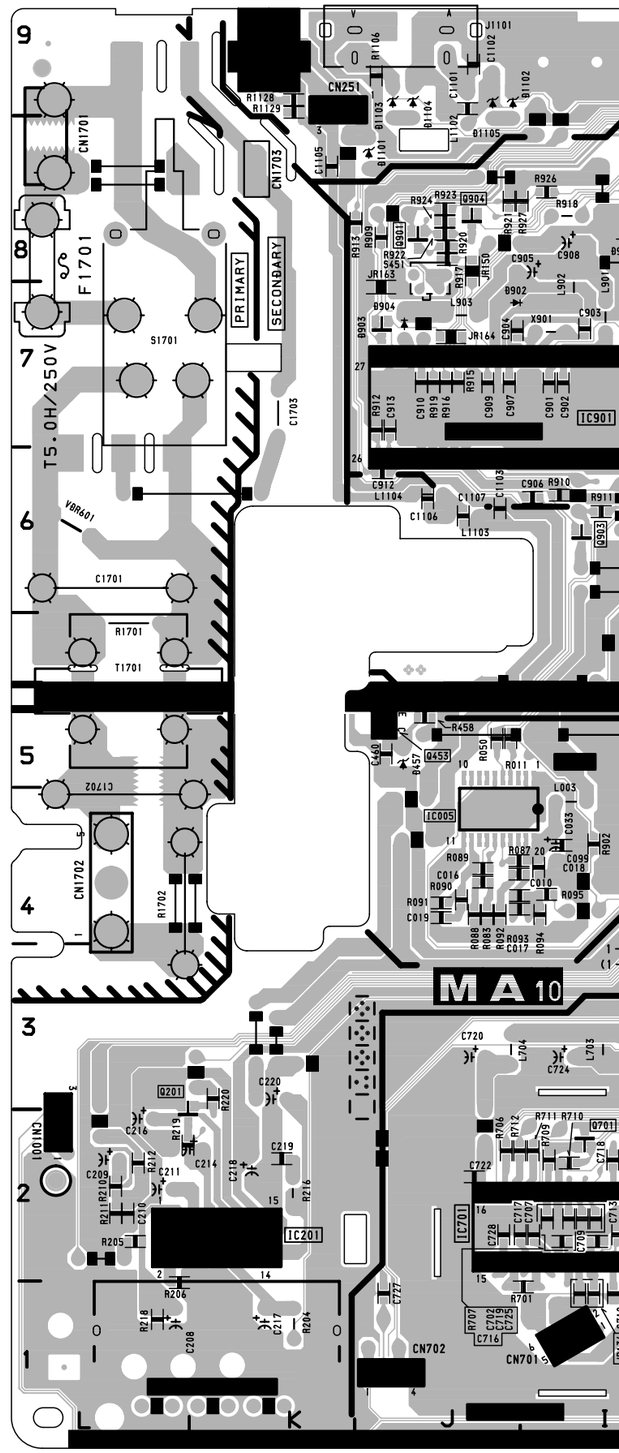
MA10 BOARD

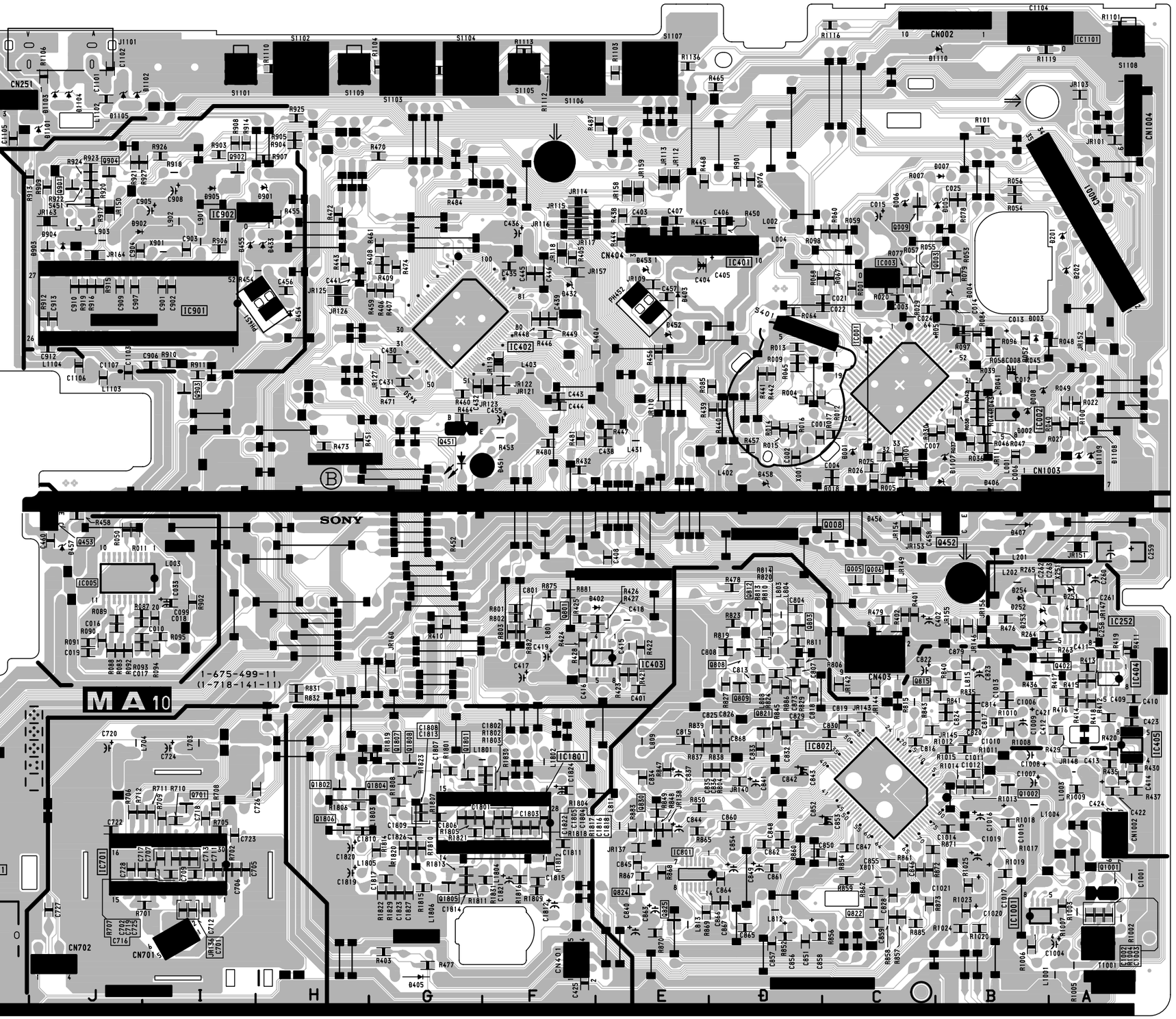
IC	
IC001	C-6
IC002	B-6
IC003	C-7
IC005	J-4
IC201	K-2
IC252	A-4
IC401	D-7
IC402	G-7
IC403	E-4
IC404	A-3
IC405	A-3
IC701	J-2
IC801	E-2
IC802	C-3
IC901	I-7
IC902	I-8
IC1001	B-1
IC1101	A-9
IC1801	F-2

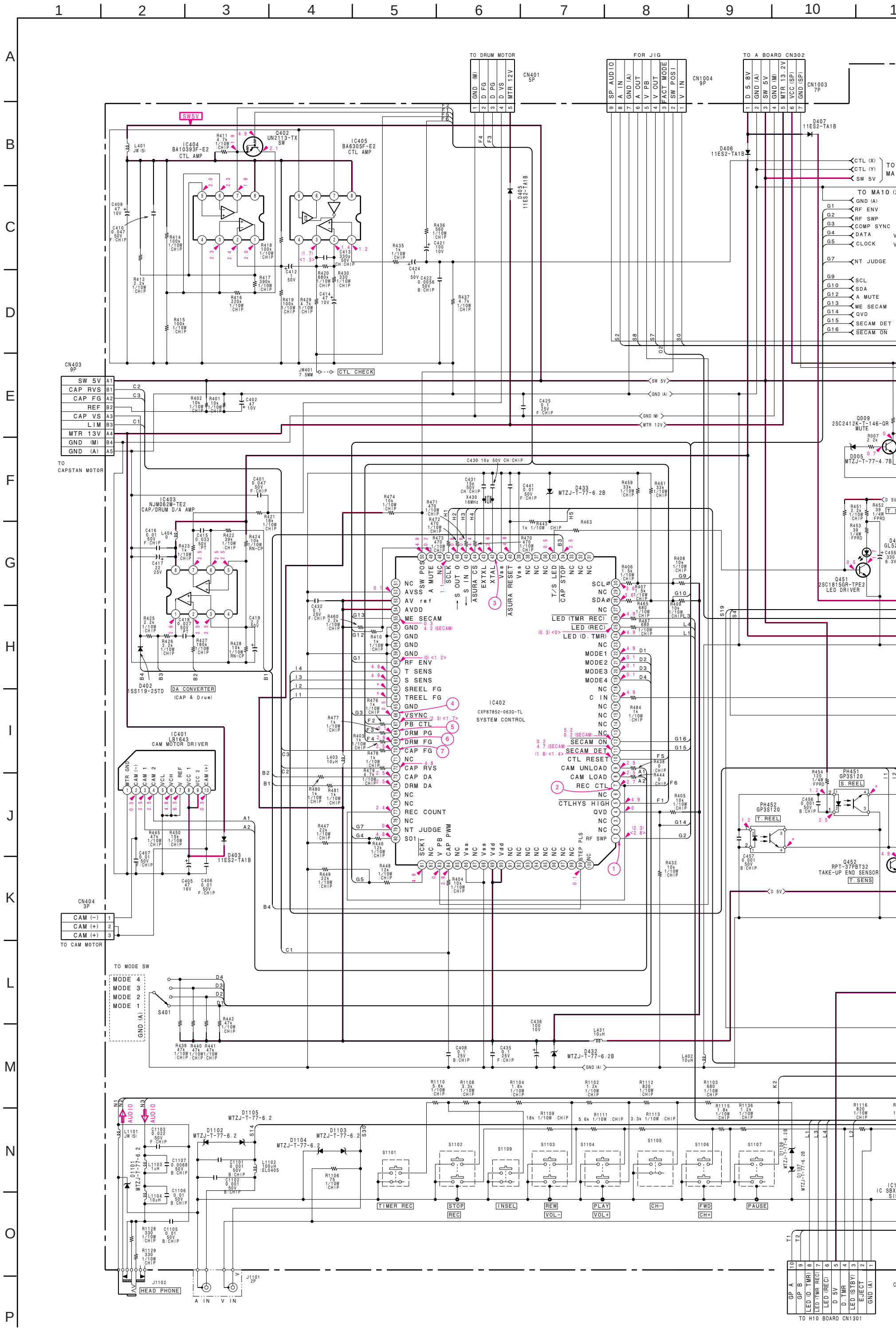
TRANSISTOR		
		*
Q003	B-7	①
Q005	C-4	①
Q006	C-4	①
Q008	C-5	①
Q009	C-8	①
Q201	L-3	①
Q402	A-4	①
Q451	G-6	-
Q452	B-5	-
Q453	J-5	-
Q701	I-2	①
Q801	F-4	①
Q803	D-4	①
Q808	D-4	①
Q809	D-3	①
Q812	D-4	①
Q815	C-3	①
Q821	D-3	①
Q822	C-1	①
Q824	E-2	①
Q825	E-1	①
Q830	E-2	①
Q901	J-8	①
Q902	I-8	①
Q903	I-6	①
Q904	J-8	①
Q1001	A-2	-
Q1002	B-2	①
Q1801	G-3	①
Q1802	H-2	①
Q1804	H-2	①
Q1805	G-2	①
Q1806	H-2	①
Q1807	G-3	①
Q1808	G-3	①

DIODE		
		*
D001	C-5	-
D002	B-6	-
D004	B-7	-
D005	B-8	-
D006	C-8	-
D007	B-8	-
D008	B-6	-
D009	——	
D201	A-7	-
D202	A-7	-
D251	A-4	-
D252	B-4	-
D253	B-4	-
D254	B-4	-
D402	E-4	-
D403	E-7	-
D405	G-1	-
D406	B-5	-
D407	B-5	-
D432	F-7	-
D433	H-7	-
D451	F-5	-
D901	H-8	-
D902	J-7	-
D903	J-7	⑧
D904	J-7	-
D905	I-8	-
D1101	J-8	-
D1102	J-9	-
D1103	J-9	-
D1104	J-9	-
D1105	J-9	-
D1106	B-5	-
D1107	B-5	-
D1108	A-5	-
D1109	A-5	-
D1110	B-9	-

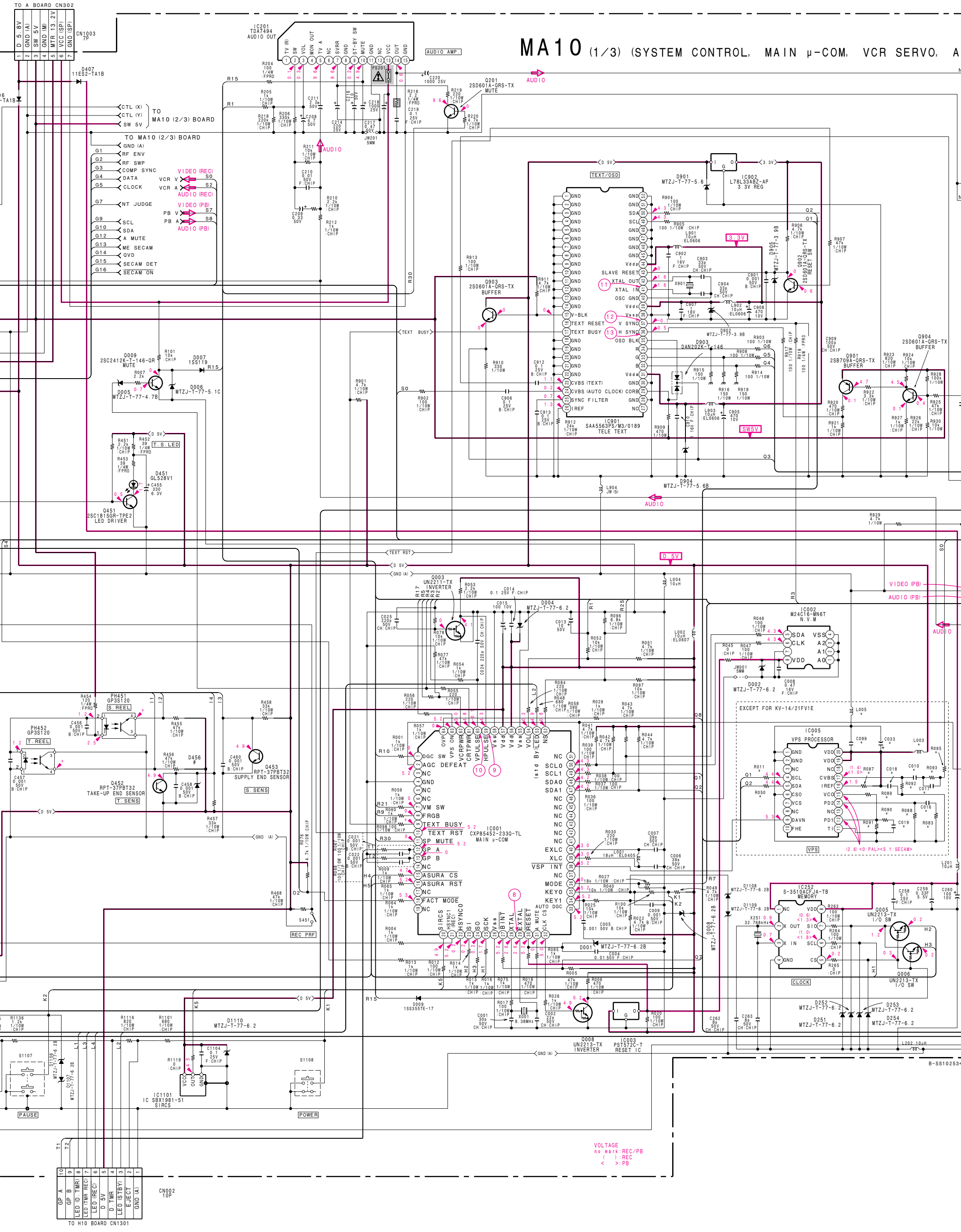
***: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 59).**

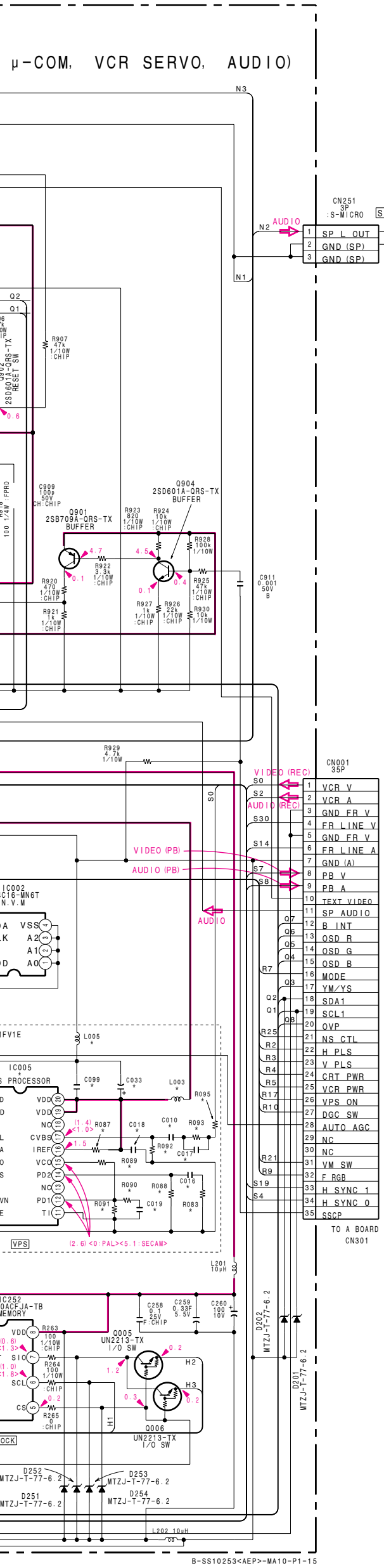



SONY
MA10
1-675-499-11
(1-718-141-11)
CN002
CN1004
CN1003
CN1002
CN001
CN404
CN403
CN702
CN701
CN901
IC901
IC902
IC401
IC003
IC001
IC402
IC002
IC005
IC1801
IC802
IC701
IC252
IC404
IC405
IC403
IC101
IC1001
S1101
S1102
S1103
S1104
S1105
S1106
S1107
S1108
S401
X001
X901
X801
T1001
J1101
CN251


TO DRUM MOTOR
CN401 5P
GND (M)
D FG
D PG
D VS
MTR 12V
FOR JIG
CN1004 9P
SP AUDIO
A IN
GND (A)
A OUT
V PB
V OUT
FACT MODE
SW POSI
V IN
TO A BOARD CN302
CN1003 7P
D 5.8V
GND (A)
SW 5V
GND (M)
MTR 13.2V
VCC (SP)
GND (SP)
SW5V
IC404 BA10393F-E2 CTL AMP
IC405 BA6305F-E2 CTL AMP
Q402 UN2113-TX SW
L401 JW (5)
D405 11ES2-TA1B
D406 11ES2-TA1B
D407 11ES2-TA1B
CTL (X)
CTL (Y)
SW 5V
TO MA
TO MA10
GND (A)
RF ENV
RF SWP
COMP SYNC
DATA
CLOCK
NT JUDGE
SCL
SDA
A MUTE
ME SECAM
QVD
SECAM DET
SECAM ON
CN403 9P
SW 5V
CAP RVS
CAP FG
REF
CAP VS
LIM
MTR 13V
GND (M)
GND (A)
TO CAPSTAN MOTOR
JW401 7.5MM
CTL CHECK
GND (A)
GND (M)
MTR 12V
C425 0.1 25V F:CHIP
Q009 2SC2412K-T-146-QR MUTE
D005 MTZJ-T-77-4.7B
Q451 2SC1815GR-TPE2 LED DRIVER
PH451 GP3S120 S.REEL
PH452 GP3S120 T.REEL
Q452 RPT-37PBT32 TAKE-UP END SENSOR T.SENS
IC403 NJM062M-TE2 CAP/DRUM D/A AMP
D402 1SS119-25TD
DA CONVERTER (CAP & Drum)
IC401 LB1643 CAM MOTOR DRIVER
D403 11ES2-TA1B
CN404 3P
CAM (−)
CAM (+)
CAM (+)
TO CAM MOTOR
IC402 CXP87852-063Q-TL SYSTEM CONTROL
D433 MTZJ-T-77-6.2B
X430 16MHz
C430 10p 50V CH:CHIP
NC
AVSS
AV ref
AVDD
ME SECAM
GND
RF ENV
T SENS
S SENS
SREEL FG
TREEL FG
VSYNC
PB CTL
DRM PG
DRM FG
CAP FG
CAP RVS
CAP DA
DRM DA
REC COUNT
NT JUDGE
SO1
SCL
SDA
LED (TMR REC)
LED (REC)
LED (D.TMR)
MODE1
MODE2
MODE3
MODE4
C IN
SECAM ON
SECAM DET
CTL RESET
CAM UNLOAD
CAM LOAD
REC CTL
CTLHYS HIGH
QVD
RF SWP
TO MODE SW
MODE 4
MODE 3
MODE 2
MODE 1
GND (A)
S401
D1105 MTZJ-T-77-6.2
D1102 MTZJ-T-77-6.2
D1103 MTZJ-T-77-6.2
D1104 MTZJ-T-77-6.2
D1101 MTZJ-T-77-6.2
D1106 MTZJ-T-77-6.2B
D1107 MTZJ-T-77-6.2B
AUDIO
J1102 HEAD PHONE
J1101 2P
A IN
V IN
TIMER REC
STOP REC
INSEL
REW VOL−
PLAY VOL+
CH−
FWD CH+
PAUSE
TO H10 BOARD CN1301
GP A
GP B
LED (D.TMR)
LED (TMR REC)
LED (REC)
D 5V
D TMR
LED (STBY)
EJECT
GND (A)

MA10 (1/3) (SYSTEM CONTROL, MAIN μ-COM, VCR SERVO, A



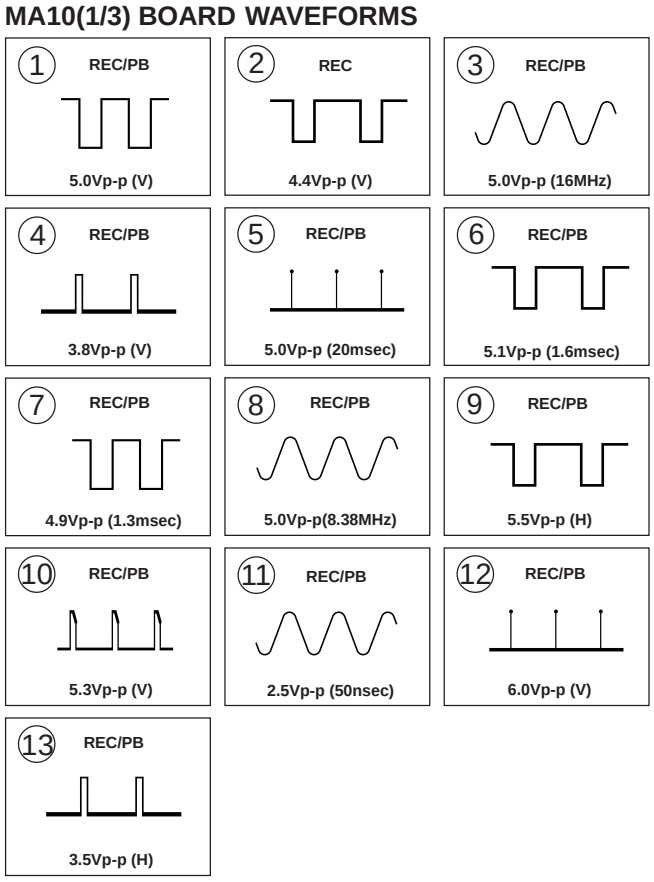


MA10(1/3) BOARD ✱ MARK LIST

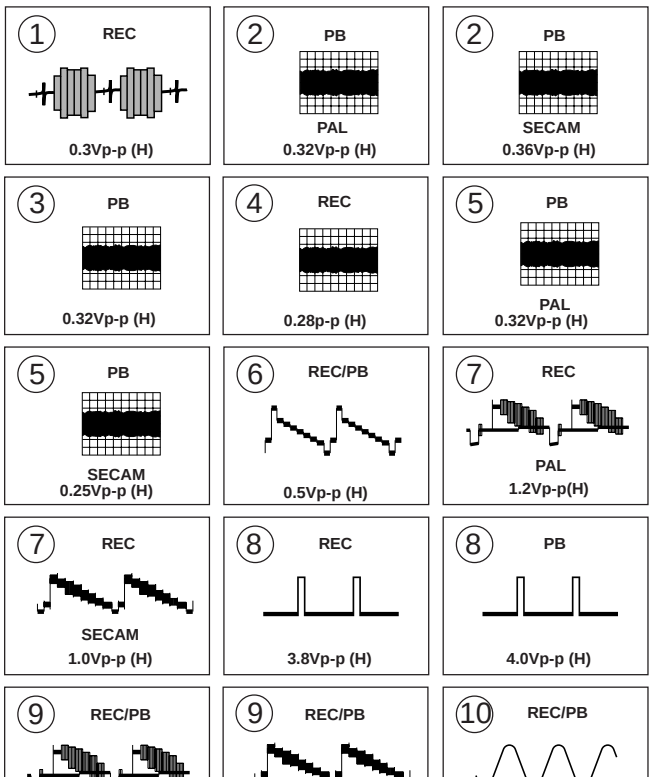
Ref No.	FR/AEP/UK model	ESP model
C010	0.033 25V B:CHIP	—
C016	0.022 B:CHIP	—
C017	150p CH:CHIP	—
C018	0.047 25V B:CHIP	—
C019	0.033 25V B:CHIP	—
C033	100 10V	—
C099	0.1 25V F:CHIP	—
IC005	SDA5650X-GEG	—
L003	10μH	—
L005	JW(5)	—
R011	100 :CHIP	—
R050	100 :CHIP	—
R083	6.8k :CHIP	—
R087	100k :CHIP	—
R088	1.2M :CHIP	—
R089	100 :CHIP	—
R090	6.8k :CHIP	—
R091	1.2M :CHIP	—
R092	1M :CHIP	—
R093	2.2k :CHIP	—
R095	0 :CHIP	—

—: Not used

MA10(1/3) BOARD WAVEFORMS



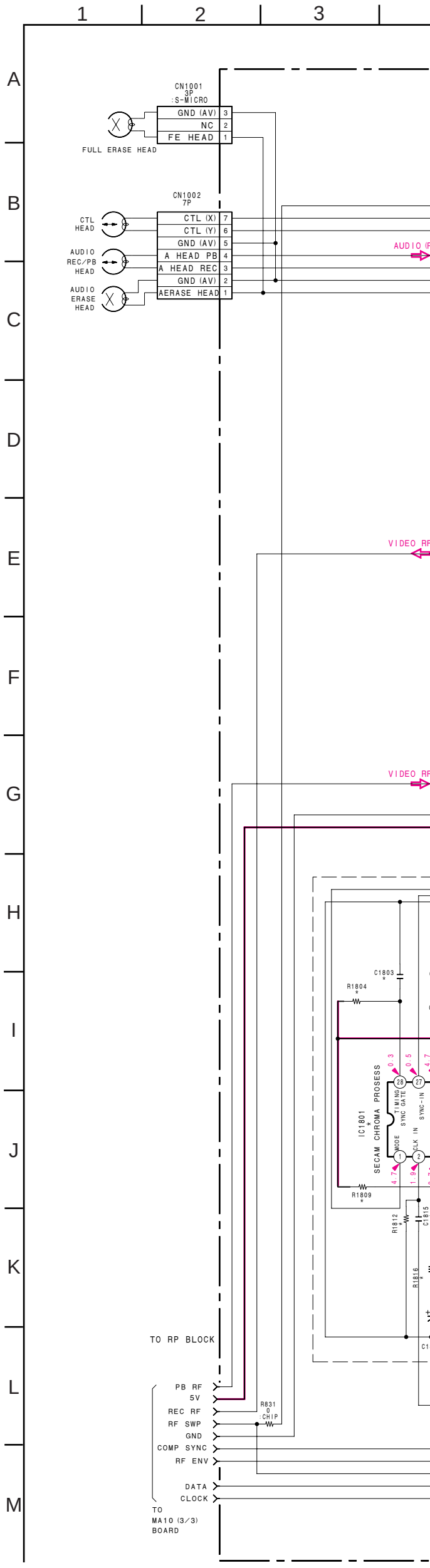
MA10(2/3) BOARD WAVEFORMS



MA10(2/3) BOARD ✱ MARK LIST

Ref No.	FR model	AEP/UK/ESP model
C1801	0.01 B:CHIP	—
C1802	150p CH:CHIP	—
C1803	220p CH:CHIP	—
C1804	0.0047 B:CHIP	—
C1805	0,0047 B:CHIP	—
C1806	0.1 25V B:CHIP	—
C1807	0.01 B:CHIP	—
C1808	0.01 B:CHIP	—
C1809	0.001 B:CHIP	—
C1810	0.01 F:CHIP	—
C1811	0.01 F:CHIP	—
C1812	47 10V	—
C1813	82p CH:CHIP	—
C1814	680p CH:CHIP	—
C1815	0.01 B:CHIP	—
C1816	220p CH:CHIP	—
C1817	0.1 25V B:CHIP	—
C1818	0.022 B:CHIP	—
C1819	10	—
C1820	0.47	—
C1821	1	—
C1822	0.01 B:CHIP	—
C1824	2.2	—
C1826	100p CH:CHIP	—
IC1801	LA7337	—
L1801	6.8µH	—
L1802	22µH	—
L1803	68µH	—
L1804	27µH	—
L1805	JW(5)	—
L1806	47µH	—
Q1801	2SA1162-YG-TE85L	—
Q1802	UN211L-TX	—
Q1804	2SC2712-YG-TE85L	—
Q1805	2SC2712-YG-TE85L	—
Q1806	2SC2712-YG-TE85L	—
Q1807	UN2213-TX	—
Q1808	UN2111-TX	—
R1801	47k :CHIP	—
R1802	8.2k :CHIP	—
R1803	9.1k :CHIP	—
R1804	20k :CHIP	—
R1805	27k :CHIP	—
R1806	8.2k :CHIP	—
R1807	1k :CHIP	—
R1808	39k :CHIP	—
R1809	27k :CHIP	—
R1810	470 :CHIP	—
R1811	5.6k :CHIP	—
R1812	22k :CHIP	—
R1813	15k :CHIP	—
R1814	10k :CHIP	—
R1815	47k :CHIP	—
R1816	2.7k :CHIP	—
R1817	47k :CHIP	—
R1818	47k :CHIP	—
R1819	10k :CHIP	—
R1820	0 :CHIP	—
R1821	27k :CHIP	—
R1822	39k :CHIP	—
R1823	10k :CHIP	—
R1831	0 :CHIP	—

—: Not used



Schematic diagram
⬅ MA10(1/3) board

Schematic diagram
MA10(2/3) board ➡

2 3 4 5 6 7 8 9 10 11 12 13

VOLTAGE
no mark:REC/PB
( ):REC
< >:PB

VOLTAGE: SECAM REC/PB mode

(B model only)

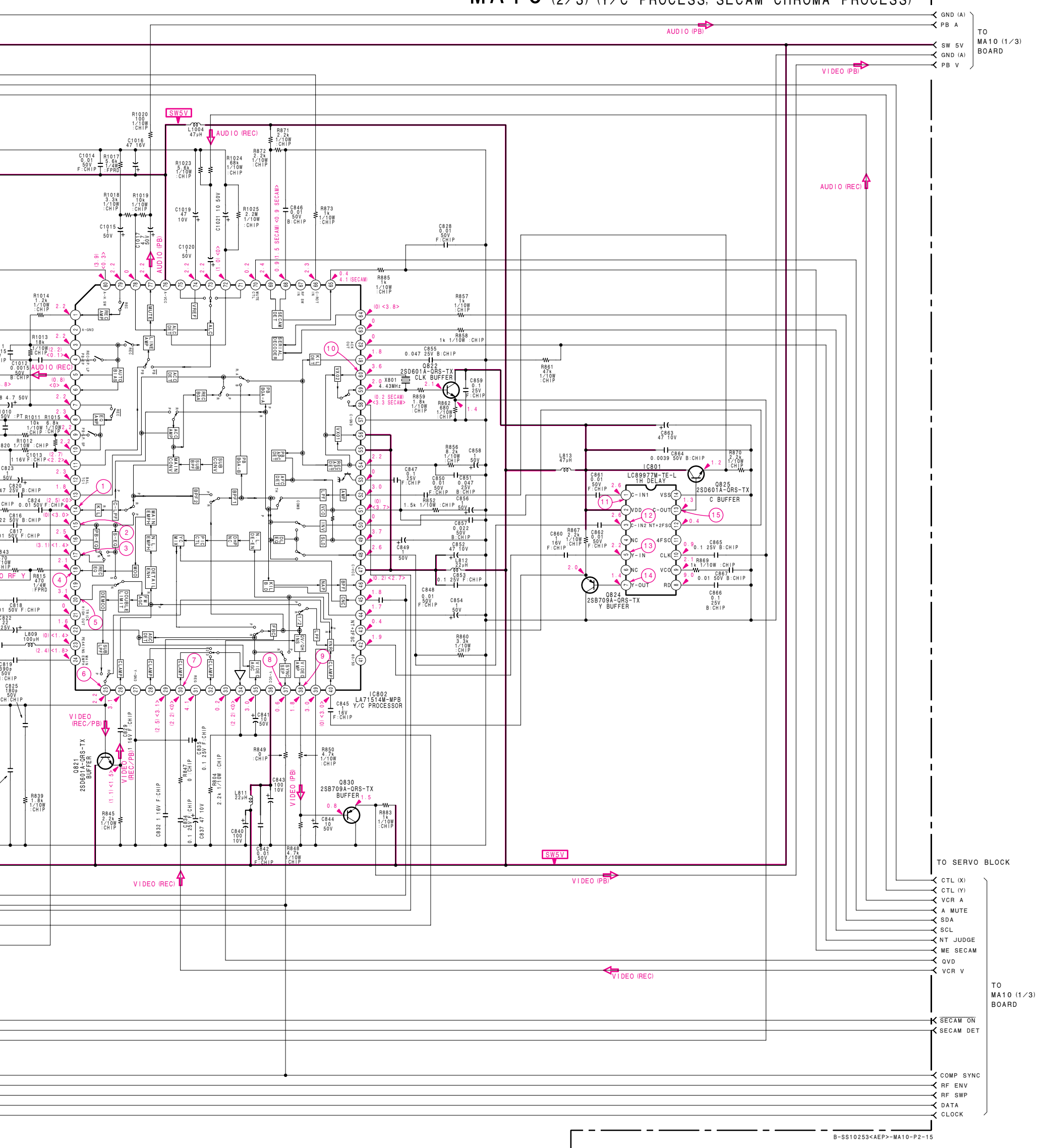
AUDIO (PB)
AUDIO (REC)
VIDEO RF (REC)
VIDEO RF (PB)
SW5V
VIDEO RF C
VIDEO RF Y
VIDEO (REC/PB)
VIDEO (REC)

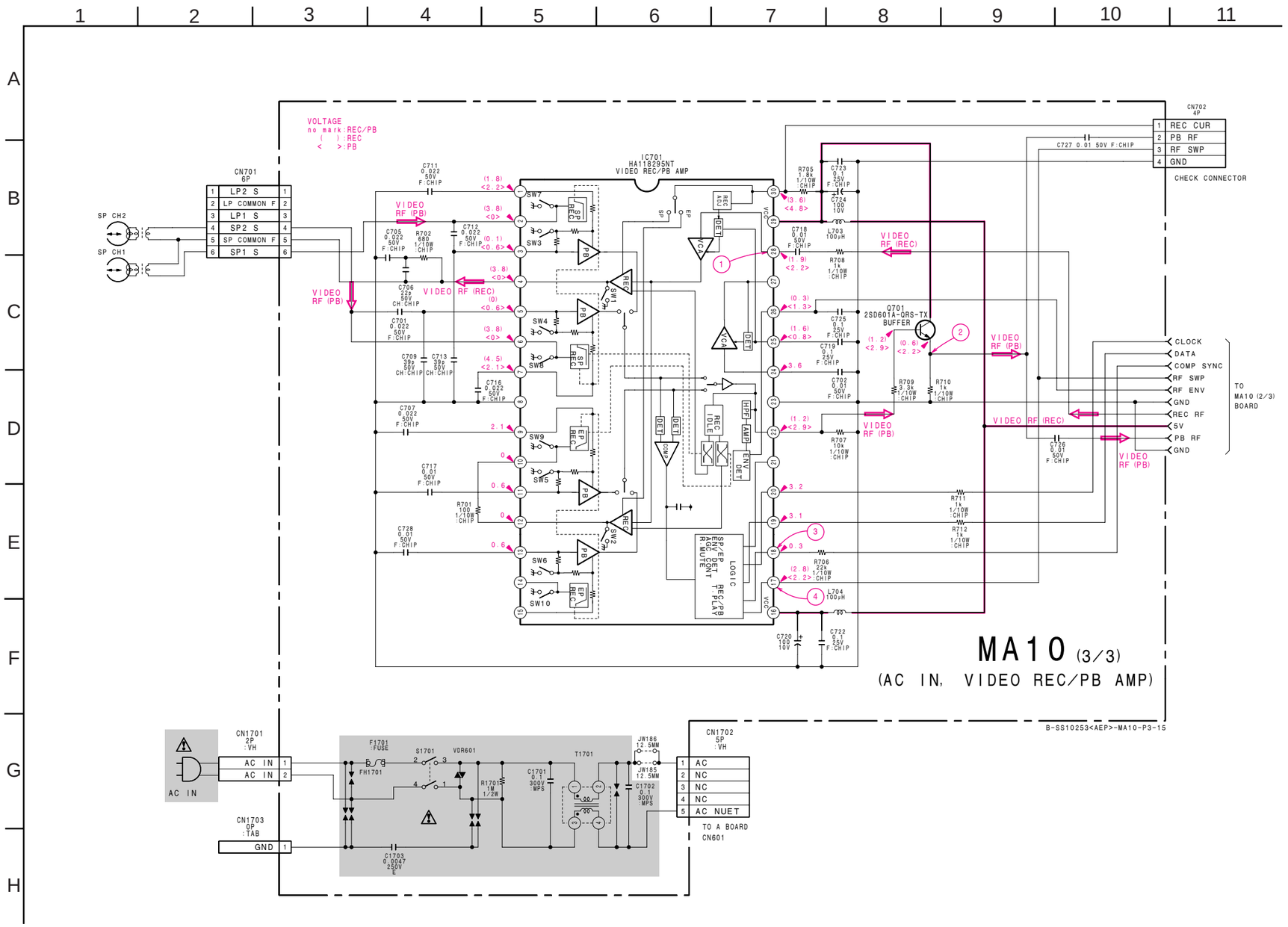
Q1001 2SD879-AA OSC
IC1001 BA7755AF-E2 AUDIO HEAD SW
Q1002 2SD601A-QRS-TX BIAS SW
Q801 2SD601A-QRS-TX BUFFER
Q803 2SD601A-QRS-TX AMP
Q808 2SD601A-QRS-TX AMP
Q812 2SD601A-QRS-TX BUFFER
Q809 UN2213-TX JOG SW
Q815 2SD601A-QRS-TX Y/C MIX
Q821 2SD601A-QRS-TX BUFFER
IC1801 SECAM CHROMA PROSESS
Q1801 BUFFER
Q1802 SECAM SW
Q1805 BUFFER
Q1806 BUFFER
Q1807 SW
Q1808 SW
Q1804 BUFFER

4.3MHZ BELL
1.1MHZ BELL

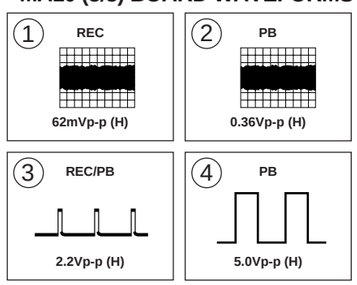
12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22

MA10 (2/3) (Y/C PROCESS, SECAM CHROMA PROCESS)





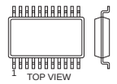
• MA10 (3/3) BOARD WAVEFORMS



5-4.SEMICONDUCTORS

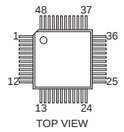
IC

BA10393F-E2
BA6305F-E2
BA7755AF-E2
M24C16-MN6T
NJM062M
S-3510ACFJA-TB



8pin SOP

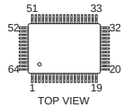
CXA1855Q



CXA2139S

48pin DIP

CXP85452-233Q-TL



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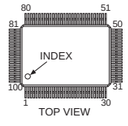
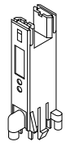


GP3S120



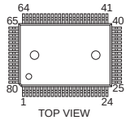
HA118295NT

30pin DIP

LA6393DLL
M5216P

8pin DIP

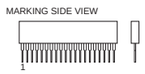
LA71514M-MPB



LA7337

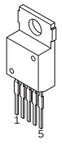
28pin DIP

LA7840L

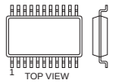


7pin SIP

LB1643



LC89978M-TE-L



16pin SOP

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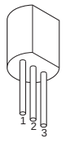

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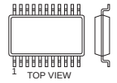

16pin SOP

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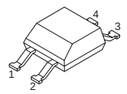

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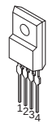
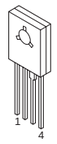
PQ09RD11



PQ30RV11



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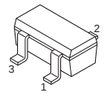
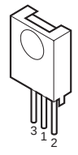


SAA5563PS/M3/0189

52pin DIP

SBX1981-51(21)



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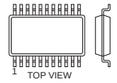

20pin SOP

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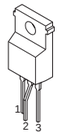

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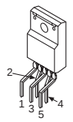

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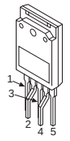

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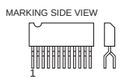

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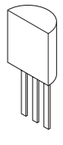

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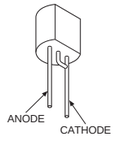

TRANSISTOR

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BC337-25
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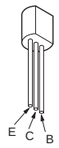
2SC1815-GR
2SD879



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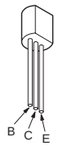

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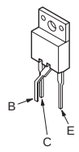

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UN2113
UN2211
UN2213
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2SC1623-L5L6
2SC2712-YG
2SD601A-Q

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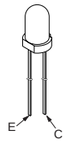

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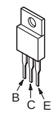

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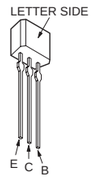
2SC2785-HFE



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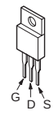
2SK2733(LBS4SONY)



DIODE

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D1NL20U
D1NL20U-TR2
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EGP20G
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ERA22-08
ERC06-15S
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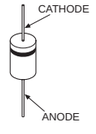
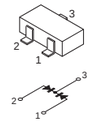


DAN202K



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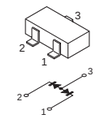

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DTZ-TT11-16B
MA111
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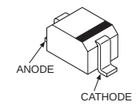

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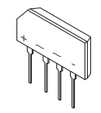

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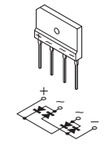

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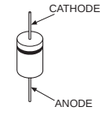

MTZJ-13
MTZJ-4.3B
MTZJ-4.7C
MTZJ-5.1C
MTZJ-6.2B
RD10ESB2
RD18ES-B2
RD3.9ES-B2
RD39ES-B2
RD5.6ESB2
RD6.2ESB-2
RD6.8ES-B2
RD8.2ES-B3
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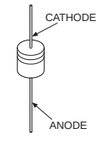
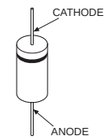
1SS119-25
11ES2



RU4AM-T3



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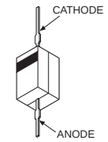
RN3Z-LF014-302



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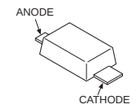
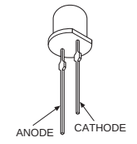
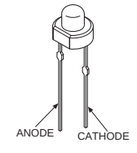
UDZS-TE17-9.1B



GL528V1



SLR-325DCT31
SLR-325VCT31



SECTION 6
EXPLODED VIEWS

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

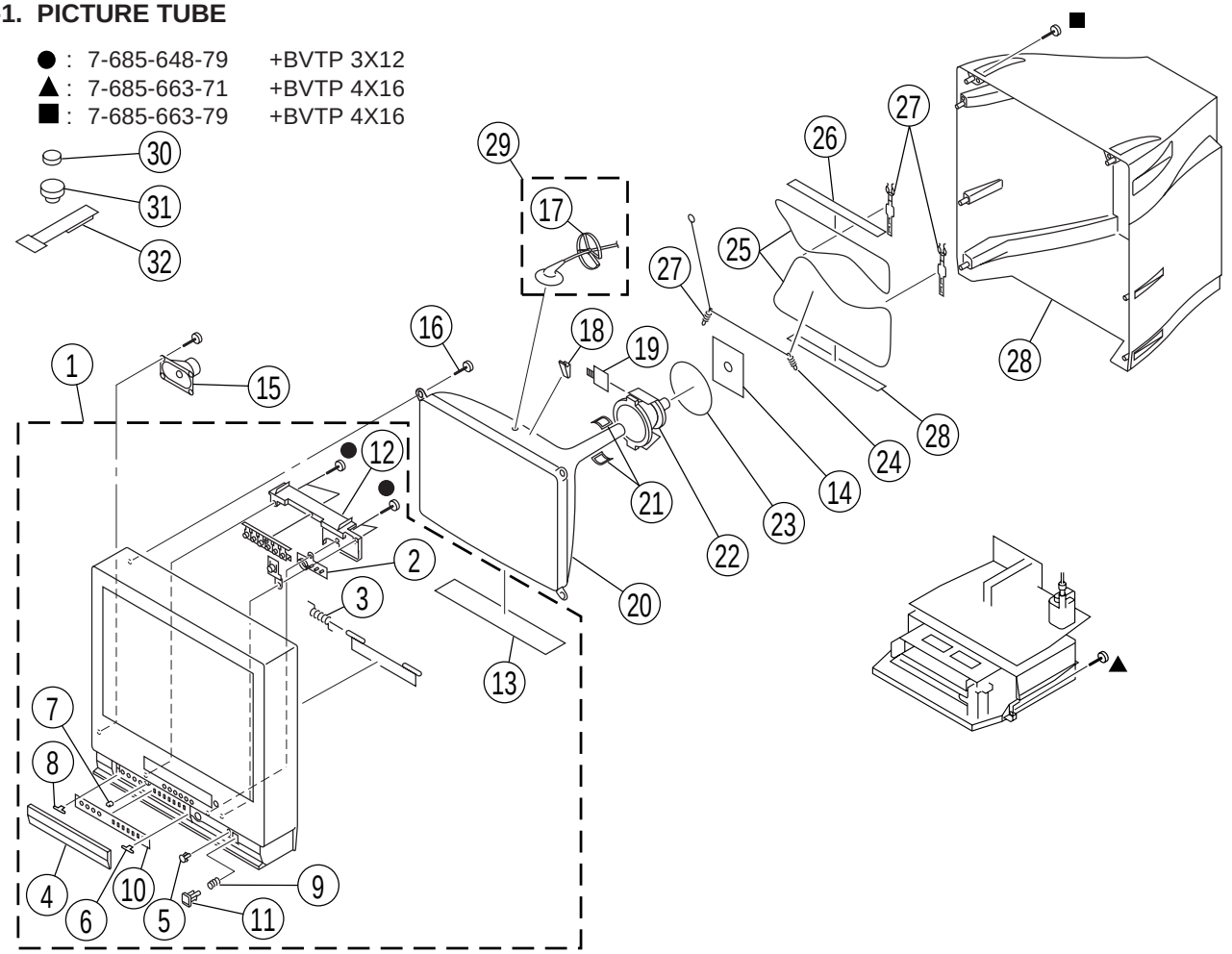
Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-1. PICTURE TUBE

● : 7-685-648-79 +BVTP 3X12
▲ : 7-685-663-71 +BVTP 4X16
■ : 7-685-663-79 +BVTP 4X16



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4200-633-1	BEZNET ASSY (14FV1D, 14FV1E)	2-13
1	X-4200-643-1	BEZNET ASSY (14FV1B)	2-13
1	X-4200-644-1	BEZNET ASSY (14FV1U)	2-13
1	X-4200-628-1	BEZNET ASSY (21FV1D, 21FV1E)	2-13
1	X-4200-638-1	BEZNET ASSY (21FV1U)	2-13
1	X-4200-639-1	BEZNET ASSY (21FV1B)	2-13
2	4-205-325-01	GUIDE, LIGHT	
3	4-050-155-01	SPRING, FL	
4	4-205-318-01	DOOR, CONTROL	
5	4-205-326-01	WINDOW, REMOTE	
6	3-703-035-11	SHAFT, LID	
7	4-072-192-01	CHATCHER, PUSH	
8	4-045-250-01	DAMPER	
9	4-204-426-01	SPRING	
10	4-205-387-01	LABEL CONTROL (AEP/ESP/UK model)	
10	4-205-387-11	LABEL CONTROL (FR model)	
11	4-205-323-01	BUTTON, POWER	
12	4-205-319-01	TRAY, CASSETTE	
13	* 4-203-553-11	SHEET, BLOTTING (21inch model)	
14	* A-1639-006-A	CVM BOARD COMPLETE (14inch model)	
14	* A-1639-005-A	CVM BOARD COMPLETE (21inch model)	
15	1-529-474-11	SPEAKER (5CM) (14inch model)	
15	1-529-710-11	SPEAKER (5X9CM) (21inch model)	
16	4-365-808-01	SCREW (5), TAPPING	
17	4-203-097-01	HOLDER, HV (14inch model)	

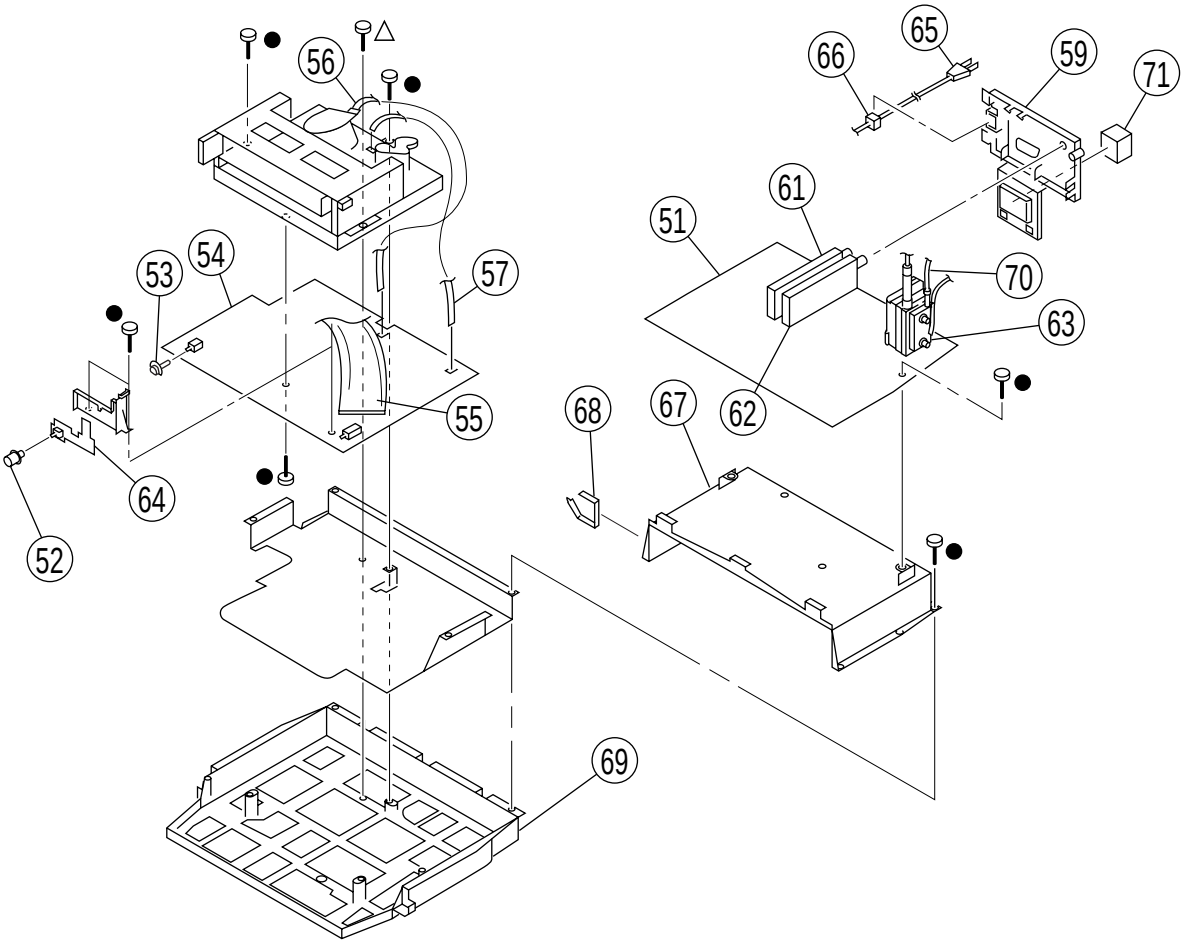
REF. NO.	PART NO.	DESCRIPTION	REMARK
18	4-074-601-01	SPACER, DY (14inch model)	
18	4-704-495-01	SPACER, DY (21inch model)	
19	2-163-920-01	PLATE, TLH CORRECTION	
20	⚠ 8-738-570-05	PICTURE TUBE (A34LRG70X) (14inch model)	
20	⚠ 8-738-836-05	PICTURE TUBE (A51LPT60X) (21inch model)	
21	⚠ 1-416-864-12	COIL, VM	
22	⚠ 8-451-401-21	DEFLECTION YOKE (Y14RSA-L) (14inch model)	
22	⚠ 8-451-505-41	DEFLECTION YOKE (Y21RSA-L) (21inch model)	
23	⚠ 1-452-728-61	COIL, NA ROTATION (RT-154) (21inch model)	
24	4-369-318-21	SPRING, TENSION	
25	⚠ 1-419-548-11	COIL, DEGAUSSING (14inch model)	
25	⚠ 1-419-772-11	COIL, DEGAUSSING (21inch model)	
26	4-203-390-11	CUSHION, DGC (21inch model)	
27	4-205-377-01	HOLDER, DGC (14inch model)	
27	4-204-900-01	BAND, DGC (21inch model)	
28	4-205-314-01	REAR COVER (14) (14inch model)	
28	4-205-316-01	REAR COVER (21) (21inch model)	
29	⚠ 1-251-317-32	CAP ASSY, HIGH VOLTAGE (14inch model)	17
30	1-452-032-00	MAGNET,DISK ; 10mmø	
31	1-452-094-00	MAGNET, ROTATABLE DISK ; 15mmø	
32	4-051-736-21	PIECE A(90), CONV. CORRECT	

6-2. CHASSIS

● : 7-685-648-79 +BVTP 3X12
△ : 7-682-147-01 +P 3X6

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

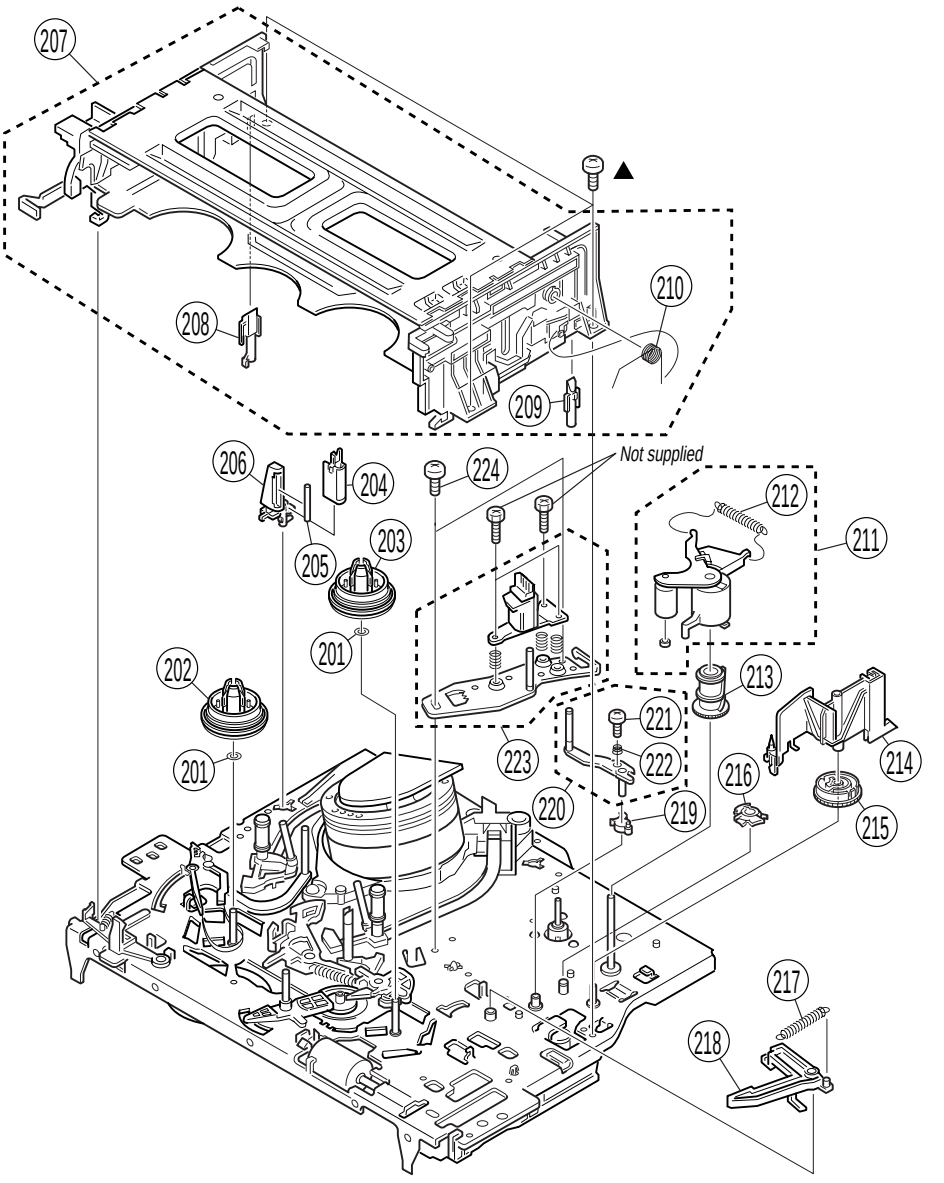


REF. NO.	PART NO.	DESCRIPTION	REMARK
51	* A-1632-904-A	A BOARD, COMPLETE	(14FV1D,14FV1E)
51	* A-1632-910-A	A BOARD, COMPLETE	(14FV1B)
51	* A-1632-911-A	A BOARD, COMPLETE	(14FV1U)
51	* A-1632-900-A	A BOARD, COMPLETE	(21FV1D,21FV1E)
51	* A-1632-907-A	A BOARD, COMPLETE	(21FV1B)
51	* A-1632-906-A	A BOARD, COMPLETE	(21FV1U)
52	4-205-324-01	BUTTON, RECORDING	
53	4-205-332-01	BUTTON, MAIN POWER	
54	* A-1635-042-A	MA10 BOARD, COMPLETE	(14FV1D,14FV1U)
54	* A-1635-043-A	MA10 BOARD, COMPLETE	(14FV1E)
54	* A-1635-044-A	MA10 BOARD, COMPLETE	(14FV1B)
54	* A-1635-042-A	MA10 BOARD, COMPLETE	(21FV1D,21FV1U)
54	* A-1635-043-A	MA10 BOARD, COMPLETE	(21FV1E)
54	* A-1635-044-A	MA10 BOARD, COMPLETE	(21FV1B)
55	1-900-905-61	CONNECTOR ASSY 35P	
56	1-900-905-74	CONNECTOR ASSY, MICRO 5P	(21inch model)
57	1-900-905-56	CONNECTOR ASSY 7P	
58	1-900-905-60	CONNECTOR ASSY 5P	
59	4-205-331-01	BOARD TERMINAL	

REF. NO.	PART NO.	DESCRIPTION	REMARK
60	3-979-508-01	SCREW +HXA TPSW 3X8	
61	8-598-536-00	FRONTED BTF-EF412 (VTR)	(FR model)
61	8-598-532-00	FRONTED BTF-EC402 (VTR)	(AEP/ESP model)
61	8-598-528-00	FRONTED BTF-EU602 (VTR)	(UK model)
62	8-598-536-00	FRONTED BTF-EF412 (TV)	(FR model)
62	8-598-532-00	FRONTED BTF-EC402 (TV)	(AEP/ESP model)
62	8-598-528-00	FRONTED BTF-EU602 (TV)	(UK model)
63	⚠ 8-598-852-00	TRANSFORMER ASSY, FLYBACK	(NX-1912//M) (14inch model)
63	⚠ 1-453-314-11	TRANSFORMER ASSY, FLYBACK	(21inch model)
64	* A-1646-216-A	H10 BOARD, COMPLETE	
65	⚠ 1-765-286-11	CORD, POWER	(AEP,ESP,FR model)
65	⚠ 1-776-860-12	POWER CORD, FILTER (UK)	(UK model)
66	4-022-115-00	HOLDER, AC CORD	
67	* 4-205-333-01	COVER, TOP	
68	* 4-316-015-00	HOLDER, WIRE	
69	* 4-205-327-01	BRACKET, MAIN	
70	⚠ 1-900-900-24	LEAD ASSY, FOCUS	
71	1-419-494-44	COIL, CHOKE 56.0MM	(21inch model)

6-3. MECHANISM DECK ASSEMBLY (1)

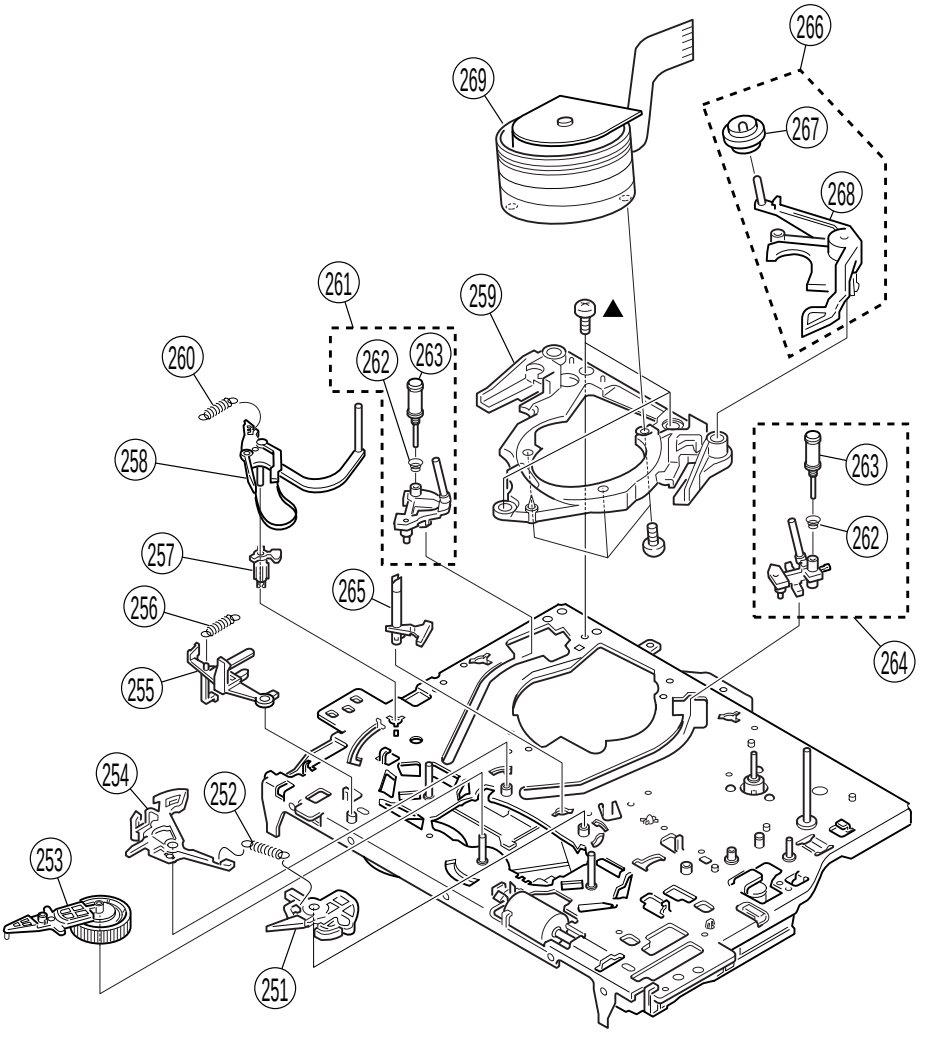
▲ : 7-685-646-79 +BVTP 3X8



REF. NO.	PART NO.	DESCRIPTION	REMARK
201	3-977-509-01	WASHER, THRUST	
202	3-977-507-01	TABLE, REEL (S)	
203	3-977-508-01	TABLE, REEL (T)	
204	1-500-471-11	HEAD, FE	
205	3-977-495-01	SHAFT TG2	
206	3-977-494-01	HOLDER, FEH	
207	A-6759-619-B	FL COMPLETE ASSY	208-210
208	3-977-535-01	PLATE, LUMINOUS(END SENSOR)	
209	3-977-536-01	PLATE, LUMINOUS(TOP SENSOR)	
210	3-970-471-01	SPRING (DECK OPEN), TORSION	
211	A-6759-863-B	PRESS BLOCK ASSY, PINCH	212
212	3-958-455-01	SPRING (PINCH), TENSION	
213	3-977-447-01	GEAR, ELEVATOR	
214	3-977-514-01	OPENER, LID	
215	3-977-441-03	GEAR, PINCH PRESSING	
216	3-977-445-02	GEAR, TG8 ARM DRIVING	
217	3-062-763-01	SPRING,EXTENSION(RVS BRAKE)	
218	X-3947-582-1	ARM ASSY, RVS BRAKE	
219	3-977-446-01	GEAR, TG8 ARM	
220	X-3947-590-1	TG8 ASSY	221,222
221	3-059-300-03	LOCK ACE SCREW	
222	3-059-958-01	SPRING, TG8	
223	A-6775-791-A	ACE BLOCK ASSY (ALPS) (EURO3)	
224	3-979-508-01	SCREW +HEXA TP SW 3X8	

6-4. MECHANISM DECK ASSEMBLY (2)

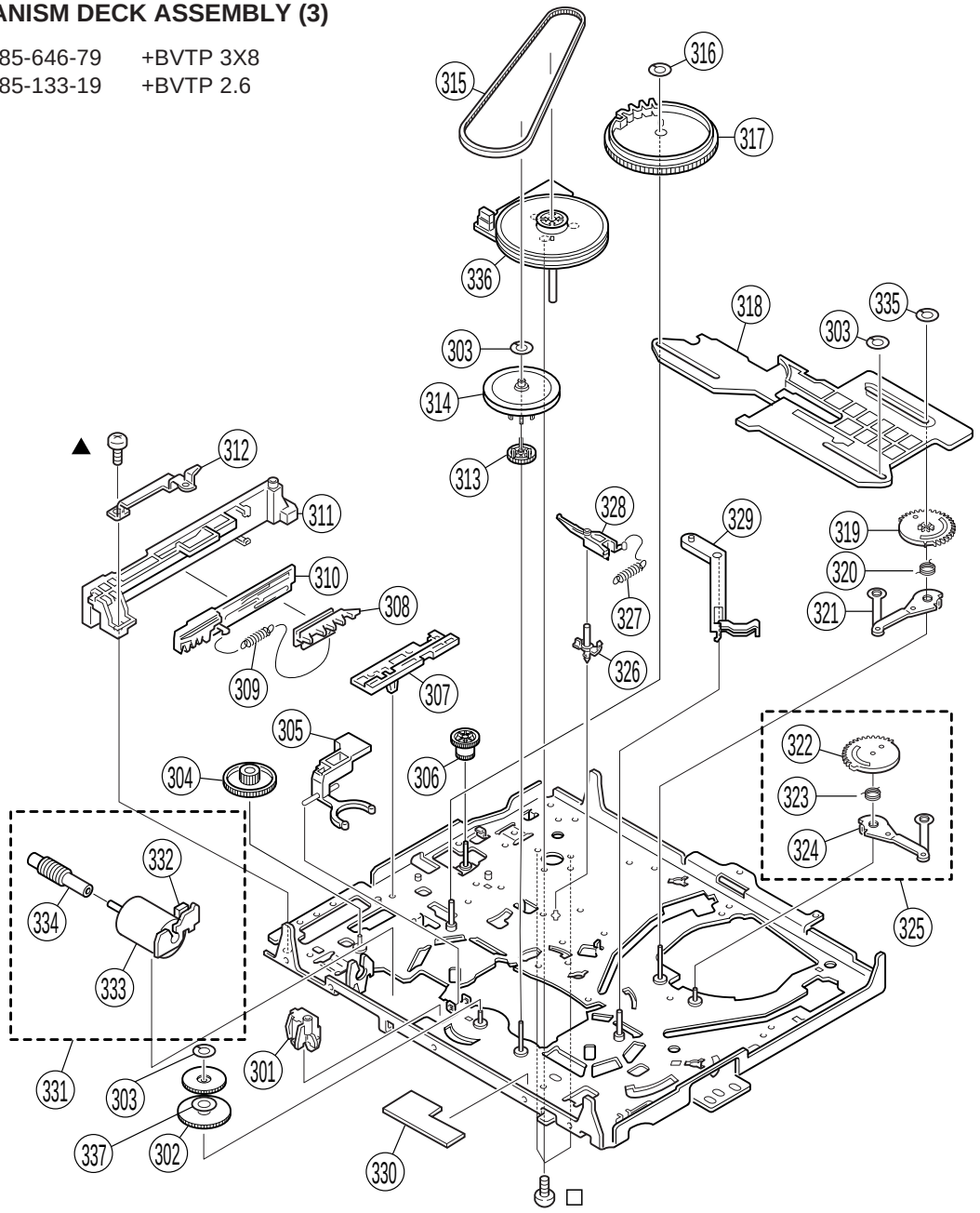
▲ : 7-685-646-79 +BVTP 3X8



REF. NO.	PART NO.	DESCRIPTION	REMARK
251	X-3947-581-4	BRAKE ASSY,MAIN(T)	
252	3-977-462-01	SPRING,EXTENTION. (MAIN BRAKE)	
253	X-3947-573-1	ARM ASSY, PENDULUM	
254	X-3947-580-5	BRAKE ASSY, MAIN(S)	
255	3-050-810-04	LEVER, REC. PROOF	
256	3-976-767-01	SPRING, TENS. (REC. PROOF)	
257	3-977-487-01	BOSS, TG1 FULCRUM	
258	X-3950-427-1	TG1 ASSY (SD)	
259	3-969-632-04	BASE, DRUM	
260	3-977-488-01	SPRING (POWER TENSION)	
261	A-6775-922-A	SHUTTLE (S) BLOCK ASSY, ST	262,263
262	3-965-178-01	SPRING	
263	X-3948-050-1	ROLLER ASSY, GUIDE	
264	A-6750-328-G	SHUTTLE (T) BLOCK ASSY	262,263
265	3-977-501-01	PLATE, LUMINOUS	
266	A-6746-074-G	ROLLER BLOCK ASSY, HC	267,268
267	X-3947-255-1	ROLLER ASSY, HC	
268	3-975-724-07	ARM, HC	
269	x-xxx-xxx-xx	DRUM ASSY (XXX)	

6-5. MECHANISM DECK ASSEMBLY (3)

▲ : 7-685-646-79 +BVTP 3X8
□ : 7-685-133-19 +BVTP 2.6



REF. NO.	PART NO.	DESCRIPTION	REMARK
301	3-977-437-01	RETAINER,CAM MOTOR	
302	X-3947-584-1	ASSY, REEL DIRECT	
303	3-977-443-01	WASHER, STOPPER	
304	3-977-438-01	WORM - WHEEL	
305	3-977-506-01	ARM, LIMITTER SELECTION	
306	3-977-444-01	GEAR, PINCH TRANSMISSION	
307	3-977-515-01	GUIDE, FL SLIDER	
308	3-977-517-01	PLATE, SLIDE, FL	
309	3-977-519-01	SPRING, TENS. (LIMIT, FL)	
310	3-977-518-02	PLATE, LIMITTER, FL	
311	3-977-516-01	HOLDER, FL SLIDER	
312	3-977-877-01	PLATE, RETAINER	
313	3-977-504-01	GEAR, CLUTCH	
314	X-3947-585-1	GEAR ASSY, PULLEY	
315	3-977-510-01	BELT, RUBBER	
316	3-056-952-11	WASHER, STOPPER	
317	3-977-439-01	GEAR, CAM	
318	3-977-442-01	SLIDER	
319	3-977-455-01	GEAR, LOADING(T)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
320	3-977-456-03	SPRING, TORSION (LOAD T)	
321	X-3948-132-2	LEVER ASSY, LOADING(T)	
322	3-977-451-01	GEAR, LOADING(S)	
323	3-977-452-01	SPRING, TORSION (LOAD S)	
324	X-3948-133-1	LEVER ASSY, LOADING(S)	
325	A-6759-616-A	GEAR BLOCK ASSY, LOADING(S)	322-324
326	3-977-468-01	SHAFT, CAPSTAN BRAKE	
327	3-977-467-02	SPRING, CAP BRAKE	
328	X-3947-583-1	BRAKE ASSY, CAPSTAN	
329	3-977-489-01	ARM, TG1 DRIVING	
330	3-989-917-01	SPACER (REC PROOF)	
331	X-3947-577-1	MOTOR ASSY, CAM (LOADING)	332-334
332	1-766-723-21	CONNECTOR, BOARD TO BOAR 3P	
333	1-541-309-11	MOTOR, L (RF-370C)	
334	3-977-436-01	WORM	
335	3-056-824-01	WASHER, STOPPER	
336	1-698-971-11	MOTOR, DC	
337	3-974-477-01	WASHER, (GEAR, LIMITTER)	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

- CAPACITORS
  PF : μμ F
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

TV BLOCK

REF. NO.	PART NO.	DESCRIPTION			REMARK
	* A-1632-910-AA	BOARD, COMPLETE (KV-14FV1B)			
		**********			
	* A-1632-904-AA	BOARD, COMPLETE (KV-14FV1D/14FV1E)			
		**********			
	* A-1632-911-AA	BOARD, COMPLETE (KV-14FV1U)			
		**********			
	* A-1632-907-AA	BOARD, COMPLETE (KV-21FV1B)			
		**********			
	* A-1632-900-AA	BOARD, COMPLETE (KV-21FV1D/21FV1E)			
		**********			
	* A-1632-906-AA	BOARD, COMPLETE (KV-21FV1U)			
		**********			
	1-555-110-00	CABLE, PIN (TU101-CP101)			
	4-382-854-01	SCREW (M3X8), P, SW (+) (IC501, IC603, IC605, IC608, IC610, Q802)			
	4-382-854-11	SCREW (M3X10), P, SW (+) (IC606)			
		<CAPACITOR>			
C101	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C102	1-126-964-11	ELECT	10UF	20.00% 50V	
C103	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C104	1-104-664-11	ELECT	47UF	20.00% 25V	
C105	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V	
C106	1-104-664-11	ELECT	47UF	20.00% 25V	
C107	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C108	1-126-964-11	ELECT	10UF	20.00% 50V	
C109	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C110	1-104-664-11	ELECT	47UF	20.00% 25V	
C111	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V	
C112	1-104-664-11	ELECT	47UF	20.00% 25V	
C113	1-163-113-00	CERAMIC CHIP	68PF	5.00% 50V	
C114	1-163-113-00	CERAMIC CHIP	68PF	5.00% 50V	
C115	1-163-113-00	CERAMIC CHIP	68PF	5.00% 50V	
C116	1-164-346-11	CERAMIC CHIP	1UF	16V	
C117	1-164-346-11	CERAMIC CHIP	1UF	16V	
C118	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V	
C119	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V	
C120	1-163-809-11	CERAMIC CHIP	0.047UF	10.00% 25V	
C121	1-104-760-11	CERAMIC CHIP	0.047UF	10.00% 50V	
C122	1-163-253-11	CERAMIC CHIP	120PF	5.00% 50V	
C123	1-163-253-11	CERAMIC CHIP	120PF	5.00% 50V	
C124	1-163-113-00	CERAMIC CHIP	68PF	5.00% 50V	
C301	1-126-963-11	ELECT	4.7UF	20.00% 50V	
C302	1-163-233-11	CERAMIC CHIP	18PF	5.00% 50V	
C303	1-126-964-11	ELECT	10UF	20.00% 50V (21inch model)	
C304	1-163-233-11	CERAMIC CHIP	18PF	5.00% 50V	
C306	1-163-259-91	CERAMIC CHIP	220PF	5.00% 50V	
C307	1-126-957-11	ELECT	0.22UF	20.00% 50V	
C308	1-115-185-11	CERAMIC CHIP	0.033UF	10.00% 50V (14inch model)	
C308	1-107-823-11	CERAMIC CHIP	0.47UF	10.00% 16V (21inch model)	
C309	1-126-965-11	ELECT	22UF	20.00% 50V	
C310	1-126-964-11	ELECT	10UF	20.00% 50V	
C311	1-104-664-11	ELECT	47UF	20.00% 25V	
C312	1-126-963-11	ELECT	4.7UF	20.00% 50V	
C313	1-115-339-11	CERAMIC CHIP	0.1UF	10.00% 50V	
C315	1-104-664-11	ELECT	47UF	20.00% 25V	
C317	1-126-964-11	ELECT	10UF	20.00% 50V	
C318	1-104-665-11	ELECT	100UF	20.00% 25V	
C319	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C320	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C321	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C322	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C323	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C325	1-104-664-11	ELECT	47UF	20.00% 25V	
C326	1-126-960-11	ELECT	1UF	20.00% 50V	
C327	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C328	1-107-714-11	ELECT	10UF	20.00% 16V	
C329	1-163-113-00	CERAMIC CHIP	68PF	5.00% 50V	
C330	1-104-665-11	ELECT	100UF	20.00% 25V	
C333	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C335	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C339	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C401	1-126-964-11	ELECT	10UF	20.00% 50V	
C402	1-126-964-11	ELECT	10UF	20.00% 50V	
C403	1-126-964-11	ELECT	10UF	20.00% 50V	
C404	1-126-964-11	ELECT	10UF	20.00% 50V	
C405	1-104-664-11	ELECT	47UF	20.00% 25V	
C406	1-164-346-11	CERAMIC CHIP	1UF	16V	
C407	1-164-346-11	CERAMIC CHIP	1UF	16V	
C408	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C410	1-104-664-11	ELECT	47UF	20.00% 25V	
C412	1-164-505-11	CERAMIC CHIP	2.2UF	16V	
C413	1-126-935-11	ELECT	470UF	20.00% 6.3V	
C414	1-164-346-11	CERAMIC CHIP	1UF	16V	
C418	1-164-346-11	CERAMIC CHIP	1UF	16V	
C419	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C420	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C421	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	
C501	1-126-934-11	ELECT	220UF	20.00% 16V	
C502	1-126-960-11	ELECT	1UF	20.00% 50V	
C504	1-107-910-11	ELECT	100UF	20.00% 50V	
C505	1-115-339-11	CERAMIC CHIP	0.1UF	10.00% 50V	
C507	1-107-910-11	ELECT	100UF	20.00% 50V	
C508	1-106-220-00	MYLAR	0.1UF	10.00% 100V	
C509	1-137-194-81	FILM	0.47UF	5.00% 50V	
C510	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C511	1-102-244-00	CERAMIC	220PF	10.00% 500V	
C513	1-126-941-11	ELECT	470UF	20.00% 25V	
C514	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C515	1-107-652-11	ELECT	10UF	20.00% 250V	
C601	1-104-664-11	ELECT	47UF	20.00% 25V	
C602	⚠ 1-117-699-51	CERAMIC	0.001UF	250V	
C603	⚠ 1-117-699-51	CERAMIC	0.001UF	250V	

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REF. NO.		PART NO.	DESCRIPTION			REMARK
C604	⚠	1-117-699-51	CERAMIC	0.001UF		250V
C605		1-125-991-11	ELECT	180UF	20%	450V
C606		1-136-165-00	FILM	0.1UF	5.00%	50V
C607	⚠	1-117-699-51	CERAMIC	0.001UF		250V
C609		1-107-929-11	ELECT	10UF	20.00%	100V
C610		1-104-664-11	ELECT	47UF	20.00%	25V
C612		1-126-943-11	ELECT	2200UF	20.00%	25V
C614		1-130-785-11	MYLAR	0.47UF	10.00%	100V
C615		1-130-785-11	MYLAR	0.47UF	10.00%	100V
C616		1-107-681-41	ELECT	33UF	20.00%	450V
C617		1-104-664-11	ELECT	47UF	20.00%	25V
C618		1-163-005-11	CERAMIC CHIP	470PF	10.00%	50V
C619		1-164-645-11	CERAMIC	1000PF	10.00%	500V
C620		1-126-941-11	ELECT	470UF	20.00%	25V
C621		1-104-664-11	ELECT	47UF	20.00%	25V
C622		1-104-664-11	ELECT	47UF	20.00%	25V
C623		1-126-969-11	ELECT	220UF	20.00%	50V
C624		1-164-645-11	CERAMIC	1000PF	10.00%	500V
C625		1-126-972-11	ELECT	1000UF	20.00%	50V
C626		1-126-944-21	ELECT	3300UF	20.00%	25V
C627		1-164-645-11	CERAMIC	1000PF	10.00%	500V
C628		1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C630		1-162-134-11	CERAMIC	470PF	10.00%	2KV
C631		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C632		1-127-759-51	ELECT	100UF	20%	160V
C634		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C635		1-102-050-00	CERAMIC	0.01UF		500V
C636		1-163-005-11	CERAMIC CHIP	470PF	10.00%	50V
C638		1-109-880-11	FILM	0.0015UF	3.00%	2KV
C639		1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C640		1-163-001-11	CERAMIC CHIP	220PF	10.00%	50V
C641		1-102-114-00	CERAMIC	470PF	10.00%	50V
C642		1-130-338-91	FILM	0.01UF	5.00%	630V
C643		1-117-699-11	CERAMIC	0.001UF		250V
C644		1-163-005-11	CERAMIC CHIP	470PF	10.00%	50V
C645		1-104-664-11	ELECT	47UF	20.00%	25V
C646		1-126-943-11	ELECT	2200UF	20.00%	25V
C647		1-104-665-11	ELECT	100UF	20.00%	25V
C648		1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C649	⚠	1-117-699-51	CERAMIC	0.001UF		250V
C650		1-137-605-11	MYLAR	0.01UF	10.00%	250V
C655		1-126-942-61	ELECT	1000UF	20.00%	25V
C657		1-104-664-11	ELECT	47UF	20.00%	25V
C659		1-161-964-51	CERAMIC	0.0047UF		250V
C660		1-104-666-11	ELECT	220UF	20.00%	25V
C661		1-115-339-11	CERAMIC CHIP	0.1UF	10.00%	50V
C662		1-128-551-11	ELECT	22UF	20.00%	25V
C663		1-104-665-11	ELECT	100UF	20.00%	25V
C664		1-104-665-11	ELECT	100UF	20.00%	25V
C665		1-104-665-11	ELECT	100UF	20.00%	25V
C666		1-126-933-11	ELECT	100UF	20.00%	16V
C667		1-102-106-00	CERAMIC	100PF	10.00%	50V
C668		1-126-949-11	ELECT	220UF	20.00%	35V
C669		1-104-664-11	ELECT	47UF	20.00%	25V
C670		1-104-664-11	ELECT	47UF	20.00%	25V
C801		1-106-371-00	MYLAR	0.015UF	99%	200V (14inch model)
C801		1-107-364-11	MYLAR	0.01UF	10.00%	400V (21inch model)
C802		1-126-941-11	ELECT	470UF	20.00%	25V
C803		1-119-859-11	FILM	0.36UF	5.00%	250V (14inch model)
C803		1-117-667-11	FILM	0.47UF	5.00%	250V (21inch model)
C804		1-104-664-11	ELECT	47UF	20.00%	25V
C805		1-123-024-21	ELECT	33UF		160V
C806		1-162-117-00	CERAMIC	100PF	10.00%	500V (14inch model)
C806		1-102-228-00	CERAMIC	470PF	10.00%	500V (21inch model)
C807		1-107-650-11	ELECT	3.3UF	20.00%	250V

REF. NO.		PART NO.	DESCRIPTION			REMARK
C808		1-163-275-11	CERAMIC CHIP	0.001UF	5.00%	50V
C809		1-163-038-11	CERAMIC CHIP	0.1UF		25V
C810		1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C812		1-107-366-11	MYLAR	0.022UF	10.00%	200V (14inch model)
C812		1-136-196-11	MYLAR	0.033UF	10.00%	250V (21inch model)
C813		1-117-721-11	CERAMIC CHIP	4700PF	5.00%	25V (14inch model)
C813		1-164-690-91	CERAMIC CHIP	0.0022UF	5.00%	50V (21inch model)
C817		1-102-114-00	CERAMIC	470PF	10.00%	50V (14inch model)
C818		1-163-263-11	CERAMIC CHIP	330PF	5.00%	50V (14inch model)
C818		1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (21inch model)
C819		1-115-522-11	FILM	1UF	5.00%	250V
C820		1-106-375-12	MYLAR	0.022UF	99%	200V (14inch model)
C820		1-106-383-00	MYLAR	0.047UF	10.00%	200V (21inch model)
C821	⚠	1-162-116-51	CERAMIC	680PF	10.00%	2KV (14inch model)
C821	⚠	1-162-134-51	CERAMIC	470PF	10.00%	2KV (21inch model)
C822		1-136-207-11	MYLAR	0.047UF	10.00%	250V
C823		1-162-131-11	CERAMIC	220PF	10.00%	2KV
C824	⚠	1-117-637-31	FILM	5600PF	3.00%	1.2KV (14inch model)
C824	⚠	1-117-643-21	FILM	9100PF	3.00%	1.2KV (21inch model)
C826		1-137-417-11	MYLAR	0.0047UF	10.00%	200V
C827	⚠	1-129-716-51	FILM	0.015UF	5.00%	630V (14inch model)
C827	⚠	1-135-840-51	FILM	0.036UF	3%	400V (21inch model)
C830		1-102-030-00	CERAMIC	330PF	10.00%	500V
			<CONNECTOR>			
CN301		1-785-386-11	SOCKET, CONNECTOR 35P			
CN302	*	1-564-510-11	PLUG, CONNECTOR 7P			
CN304	*	1-564-508-11	PLUG, CONNECTOR 5P			
CN305	*	1-564-509-11	PLUG, CONNECTOR 6P			
CN306	*	1-564-509-11	PLUG, CONNECTOR 6P			
CN601	*	1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P			
CN602	*	1-508-786-00	PIN, CONNECTOR (5mm PITCH) 2P			
CN603	*	1-508-765-00	PIN, CONNECTOR (5mm PITCH) 3P			
CN604		1-695-915-11	TAB (CONTACT)			
CN606	*	1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P			(21inch model)
CN801	*	1-580-798-11	CONNECTOR PIN (DY) 6P			
CN803	*	1-564-508-11	PLUG, CONNECTOR 5P			
			<COMPOSITION CIRCUIT BLOCK>			
CP101		1-251-658-11	SPLITTER RF			
			<DIODE>			
D101		8-719-914-43	DIODE DAN202K			
D102		8-719-069-55	ZENER DIODE UDZS-TE17-5.6B			
D103		8-719-069-55	ZENER DIODE UDZS-TE17-5.6B			
D301		8-719-109-89	ZENER DIODE RD5.6ESB2			
D302		8-719-109-89	ZENER DIODE RD5.6ESB2			
D304		8-719-110-14	ZENER DIODE RD9.1ES-B3			
D305		8-719-911-19	DIODE 1SS119-25			
D307		8-719-911-19	DIODE 1SS119-25			
D308		8-719-110-14	ZENER DIODE RD9.1ES-B3			
D313		8-719-110-14	ZENER DIODE RD9.1ES-B3			
D314		8-719-914-44	DIODE DAP202			(21inch model)

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REF. NO.	PART NO.	DESCRIPTION	REMARK
D401	8-719-069-60	ZENER DIODE UDZS-TE17-9.1B	
D402	8-719-110-17	ZENER DIODE RD10ESB2	
D404	8-719-109-97	ZENER DIODE RD6.8ES-B2	
D405	8-719-110-14	ZENER DIODE RD9.1ES-B3	
D406	8-719-110-14	ZENER DIODE RD9.1ES-B3	
D407	8-719-109-97	ZENER DIODE RD6.8ES-B2	
D408	8-719-110-14	ZENER DIODE RD9.1ES-B3	
D409	8-719-921-86	ZENER DIODE MTZJ-13	
D410	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D411	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D412	8-719-109-97	ZENER DIODE RD6.8ES-B2	
D413	8-719-109-97	ZENER DIODE RD6.8ES-B2	
D414	8-719-109-97	ZENER DIODE RD6.8ES-B2	
D501	8-719-110-49	ZENER DIODE RD18ES-B2	
D502	8-719-109-89	ZENER DIODE RD5.6ESB2	
D503	8-719-908-03	DIODE GP08D	
D506	8-719-302-43	DIODE EL1Z	
D507	8-719-302-43	DIODE EL1Z	
D601	⚠ 8-719-510-63	DIODE D4SB60L-F	
D602	⚠ 8-719-510-35	DIODE D2SBA60F	
D604	8-719-911-19	DIODE 1SS119-25	
D605	8-719-979-50	DIODE EGP30D	
D606	8-719-063-74	DIODE D1NL20U-TR2	
D607	8-719-911-19	DIODE 1SS119-25	
D608	8-719-110-49	ZENER DIODE RD18ES-B2	
D609	8-719-064-47	DIODE RN1Z-LF-B1	
D610	8-719-064-47	DIODE RN1Z-LF-B1	
D611	8-759-157-40	HTC µPC574J	
D612	8-719-312-10	DIODE RU4AM-T3	
D613	8-719-978-69	ZENER DIODE DTZ-TT11-16B	
D614	8-719-911-19	DIODE 1SS119-25	
D615	8-719-911-19	DIODE 1SS119-25	
D616	8-719-063-74	DIODE D1NL20U-TR2	
D617	8-719-077-12	DIODE RG1C-LFC1	
D618	8-719-063-74	DIODE D1NL20U-TR2	
D619	8-719-043-76	DIODE AK04V0	
D620	8-719-063-74	DIODE D1NL20U-TR2	
D621	8-719-063-70	DIODE D1NL20U	
D622	8-719-911-19	DIODE 1SS119-25	
D623	8-719-073-01	DIODE MA111-(K8).S0	
D624	8-719-109-72	ZENER DIODE RD3.9ES-B2	
D625	8-719-067-78	DIODE RN3Z-LF014-302	
D626	8-719-948-45	DIODE ERA22-08	
D627	8-719-023-07	DIODE D2S6MF	
D628	8-719-911-19	DIODE 1SS119-25	
D629	8-719-911-19	DIODE 1SS119-25	
D631	8-719-073-01	DIODE MA111-(K8).S0	
D632	8-719-911-19	DIODE 1SS119-25	
D633	8-719-911-19	DIODE 1SS119-25	
D634	8-719-110-88	ZENER DIODE RD39ES-B2	
D635	8-719-063-70	DIODE D1NL20U	
D636	8-719-991-33	DIODE 1SS133T-77	
D637	8-719-982-11	ZENER DIODE MTZJ-4.3B	
D638	8-719-911-19	DIODE 1SS119-25	
D639	8-719-110-09	ZENER DIODE RD8.2ES-B3	
D801	8-719-302-43	DIODE EL1Z	
D803	8-719-302-43	DIODE EL1Z	
D804	8-719-908-03	DIODE GP08D	
D805	8-719-921-44	ZENER DIODE MTZJ-5.1C	
D807	8-719-908-03	DIODE GP08D	
D810	8-719-945-80	DIODE ERC06-15S	
D811	8-719-979-85	DIODE EGP20G	
D812	8-719-110-14	ZENER DIODE RD9.1ES-B3	

<FERRITE BEAD>

FB601	1-410-397-21	FERRITE	1.1UH
FB602	1-410-397-21	FERRITE	1.1UH
FB603	1-410-397-21	FERRITE	1.1UH
FB604	1-410-397-21	FERRITE	1.1UH
FB605	1-410-397-21	FERRITE	1.1UH
FB606	1-410-397-21	FERRITE	1.1UH
FB607	1-410-397-21	FERRITE	1.1UH
FB608	1-410-397-21	FERRITE	1.1UH
FB609	1-410-397-21	FERRITE	1.1UH
FB610	1-410-397-21	FERRITE	1.1UH
FB611	1-410-397-21	FERRITE	1.1UH
FB613	1-410-397-21	FERRITE	1.1UH
FB614	1-410-397-21	FERRITE	1.1UH
FB620	1-410-397-21	FERRITE	1.1UH

<IC>

IC301	8-752-090-41	IC CXA2139S
IC401	8-752-068-45	IC CXA1855Q
IC501	8-759-444-83	IC LA7840L
IC601	8-759-471-81	IC PQ05RD11
IC602	8-759-678-14	IC MC33364DR2
IC603	8-759-098-24	IC PQ30RV11
IC604	8-759-098-24	IC PQ30RV11
IC605	8-749-921-21	IC SI3120C
IC606	⚠ 8-749-016-20	IC STR-F6654-LF1357
IC607	⚠ 8-749-016-19	IC SE135N-LF4
IC608	8-759-459-99	IC PQ09RD11
IC609	8-759-098-24	IC PQ30RV11
IC610	8-759-098-24	IC PQ30RV11
IC611	8-759-198-31	IC uPC1093J-1-T
IC801	8-759-659-67	IC LA6393DLL

<JACK>

J401	1-695-551-11	SOCKET 21P

<CHIP CONDUCTOR>

JR2	1-216-295-11	SHORT	0
JR3	1-216-295-11	SHORT	0
JR4	1-216-296-91	SHORT	0
JR5	1-216-295-11	SHORT	0
JR6	1-216-296-91	SHORT	0
JR7	1-216-295-11	SHORT	0
JR9	1-216-296-91	SHORT	0
JR10	1-216-295-11	SHORT	0
JR12	1-216-295-11	SHORT	0
JR13	1-216-296-91	SHORT	0
JR14	1-216-296-91	SHORT	0
JR15	1-216-296-91	SHORT	0
JR16	1-216-296-91	SHORT	0
JR17	1-216-296-91	SHORT	0
JR18	1-216-296-91	SHORT	0
JR19	1-216-296-91	SHORT	0
JR20	1-216-296-91	SHORT	0
JR23	1-216-295-11	SHORT	0
JR24	1-216-295-11	SHORT	0
JR25	1-216-295-11	SHORT	0
JR26	1-216-295-11	SHORT	0
JR130	1-216-295-11	SHORT	0

<COIL>

L102	1-408-611-31	INDUCTOR 47UH
L103	1-408-611-31	INDUCTOR 47UH
L104	1-412-002-31	INDUCTOR CHIP 4.7UH
L105	1-412-002-31	INDUCTOR CHIP 4.7UH
L106	1-408-607-31	INDUCTOR 22UH
L107	1-412-002-31	INDUCTOR CHIP 4.7UH
L108	1-412-002-31	INDUCTOR CHIP 4.7UH
L302	1-414-856-11	INDUCTOR 10UH
L303	1-414-856-11	INDUCTOR 10UH
L304	1-410-396-41	FERRITE 0.45UH

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REF. NO.	PART NO.	DESCRIPTION	REMARK
L401	1-408-615-31	INDUCTOR 100UH	
L402	1-408-599-31	INDUCTOR 4.7UH	
L403	1-414-856-11	INDUCTOR 10UH	
L501	1-412-533-21	INDUCTOR 47UH	
L601	1-412-525-31	INDUCTOR 10UH	
L602	1-412-533-21	INDUCTOR 47UH	
L603	1-412-525-31	INDUCTOR 10UH	
L604	1-406-983-11	INDUCTOR 1MH	
L605	1-412-534-31	INDUCTOR 56UH	
L801	1-412-531-31	INDUCTOR 33UH	
L802	⚠ 1-419-551-11	COIL, HORIZONTAL LINEARITY (14inch model)	
L802	⚠ 1-419-552-11	COIL, HORIZONTAL LINEARITY (21inch model)	
L803	1-406-677-11	INDUCTOR 10MH	
L804	1-412-553-11	INDUCTOR 3.3MH	
L805	1-406-989-21	INDUCTOR 10MH	(14inch model)
L805	1-459-111-00	INDUCTOR 10MH	(21inch model)
L808	1-406-984-11	INDUCTOR 1.5MH	(14inch model)
L808	1-419-263-11	COIL, WITH CORE	(21inch model)
		<PHOTO COUPLER>	
PH601	⚠ 8-749-016-21	PHOTO COUPLER TCET1103G	
PH602	⚠ 8-749-016-21	PHOTO COUPLER TCET1103G	
		<IC LINK>	
PS601	⚠ 1-532-686-91	LINK, IC (2.7A/150V)	
PS602	⚠ 1-532-686-91	LINK, IC (2.7A/150V)	
PS603	⚠ 1-532-686-91	LINK, IC (2.7A/150V)	
PS604	⚠ 1-532-686-91	LINK, IC (2.7A/150V)	
		<TRANSISTOR>	
Q101	8-729-026-50	TRANSISTOR 2SA1037AK-T-146-QR	
Q102	8-729-026-50	TRANSISTOR 2SA1037AK-T-146-QR	
Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q302	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q304	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q305	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(21inch model)
Q306	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q401	8-729-216-22	TRANSISTOR 2SA1162-G	
Q402	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q403	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q404	8-729-216-22	TRANSISTOR 2SA1162-G	
Q405	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q501	8-729-421-22	TRANSISTOR UN2211	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q602	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q603	8-729-026-50	TRANSISTOR 2SA1037AK-T-146-QR	
Q604	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q605	8-729-053-40	TRANSISTOR 2SK2733(LBS4SONY)	
Q606	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q609	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q611	8-729-200-17	TRANSISTOR 2SA1091-O	
Q612	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q801	8-729-038-82	TRANSISTOR 2SK2251-01	
Q802	8-729-051-82	TRANSISTOR BU4508DX-ON5210	
Q803	8-729-038-82	TRANSISTOR 2SK2251-01	
		<RESISTOR>	
R101	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R102	1-216-025-11	RES-CHIP 100 5% 1/10W	
R103	1-216-025-11	RES-CHIP 100 5% 1/10W	
R104	1-216-025-11	RES-CHIP 100 5% 1/10W	
R105	1-216-025-11	RES-CHIP 100 5% 1/10W	
R106	1-216-025-11	RES-CHIP 100 5% 1/10W	
R107	1-216-025-11	RES-CHIP 100 5% 1/10W	
R108	1-216-025-11	RES-CHIP 100 5% 1/10W	
R109	1-216-025-11	RES-CHIP 100 5% 1/10W	
R110	1-216-069-00	RES-CHIP 6.8K 5% 1/10W	
R111	1-216-121-11	RES-CHIP 1M 5% 1/10W	
R118	1-216-033-00	RES-CHIP 220 5% 1/10W	
R119	1-216-105-91	RES-CHIP 220K 5% 1/10W	
R120	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R121	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R122	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R123	1-216-077-91	RES-CHIP 15K 5% 1/10W	
R124	1-216-033-00	RES-CHIP 220 5% 1/10W	
R125	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R126	1-216-105-91	RES-CHIP 220K 5% 1/10W	
R127	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R128	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R129	1-216-077-91	RES-CHIP 15K 5% 1/10W	
R151	1-216-295-11	SHORT 0	
R152	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
R159	1-216-025-11	RES-CHIP 100 5% 1/10W	
R160	1-216-025-11	RES-CHIP 100 5% 1/10W	
R301	1-216-085-00	RES-CHIP 33K 5% 1/10W	(14inch model)
R301	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	(21inch model)
R303	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R304	1-216-025-11	RES-CHIP 100 5% 1/10W	
R305	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R306	1-216-073-00	RES-CHIP 10K 5% 1/10W	(21inch model)
R307	1-216-081-00	RES-CHIP 22K 5% 1/10W	
R308	1-216-073-00	RES-CHIP 10K 5% 1/10W	(21inch model)
R309	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R311	1-216-073-00	RES-CHIP 10K 5% 1/10W	(21inch model)
R312	1-216-675-91	METAL CHIP 10K 0.50% 1/10W	
R313	1-216-061-00	RES-CHIP 3.3K 5% 1/10W	
R314	1-216-025-11	RES-CHIP 100 5% 1/10W	
R315	1-216-025-11	RES-CHIP 100 5% 1/10W	
R316	1-216-025-11	RES-CHIP 100 5% 1/10W	
R317	1-216-025-11	RES-CHIP 100 5% 1/10W	
R318	1-216-025-11	RES-CHIP 100 5% 1/10W	
R319	1-216-025-11	RES-CHIP 100 5% 1/10W	
R320	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R321	1-216-025-11	RES-CHIP 100 5% 1/10W	
R322	1-216-041-00	RES-CHIP 470 5% 1/10W	
R323	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R324	1-216-025-11	RES-CHIP 100 5% 1/10W	
R325	1-216-041-00	RES-CHIP 470 5% 1/10W	
R326	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R327	1-216-025-11	RES-CHIP 100 5% 1/10W	
R328	1-216-041-00	RES-CHIP 470 5% 1/10W	
R329	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R330	1-216-025-11	RES-CHIP 100 5% 1/10W	
R331	1-216-065-91	RES-CHIP 4.7K 5% 1/10W	
R332	1-216-085-00	RES-CHIP 33K 5% 1/10W	
R334	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R335	1-247-807-31	CARBON 100 5% 1/4W	
R336	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R337	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R338	1-216-057-00	RES-CHIP 2.2K 5% 1/10W	
R340	1-216-097-11	RES-CHIP 100K 5% 1/10W	
R341	1-247-807-31	CARBON 100 5% 1/4W	
R342	1-216-025-11	RES-CHIP 100 5% 1/10W	
R343	1-247-807-31	CARBON 100 5% 1/4W	
R344	1-216-077-91	RES-CHIP 15K 5% 1/10W	
R346	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R347	1-216-049-11	RES-CHIP 1K 5% 1/10W	
R349	1-216-295-11	SHORT 0	

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The components identified by shading and mark ⚠ are critical for safety.
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Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION			REMARK
R350	1-216-077-91	RES-CHIP	15K	5%	1/10W
R351	1-216-073-00	RES-CHIP	10K	5%	1/10W
R352	1-216-041-00	RES-CHIP	470	5%	1/10W
R353	1-216-041-00	RES-CHIP	470	5%	1/10W
R354	1-216-041-00	RES-CHIP	470	5%	1/10W
R355	1-216-041-00	RES-CHIP	470	5%	1/10W
R357	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R358	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R359	1-216-073-00	RES-CHIP	10K	5%	1/10W
R364	1-216-045-00	RES-CHIP	680	5%	1/10W
R365	1-216-073-00	RES-CHIP	10K	5%	1/10W
R401	1-216-025-11	RES-CHIP	100	5%	1/10W
R402	1-216-025-11	RES-CHIP	100	5%	1/10W
R403	1-216-033-00	RES-CHIP	220	5%	1/10W
R404	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R405	1-216-295-11	SHORT	0		
R406	1-216-033-00	RES-CHIP	220	5%	1/10W
R407	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R408	1-216-033-00	RES-CHIP	220	5%	1/10W
R409	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R410	1-216-089-11	RES-CHIP	47K	5%	1/10W
R411	1-216-025-11	RES-CHIP	100	5%	1/10W
R412	1-216-025-11	RES-CHIP	100	5%	1/10W
R413	1-216-022-00	RES-CHIP	75	5%	1/10W
R414	1-216-022-00	RES-CHIP	75	5%	1/10W
R415	1-216-022-00	RES-CHIP	75	5%	1/10W
R416	1-216-022-00	RES-CHIP	75	5%	1/10W
R417	1-216-025-11	RES-CHIP	100	5%	1/10W
R418	1-216-025-11	RES-CHIP	100	5%	1/10W
R419	1-216-025-11	RES-CHIP	100	5%	1/10W
R420	1-216-025-11	RES-CHIP	100	5%	1/10W
R421	1-216-022-00	RES-CHIP	75	5%	1/10W
R422	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R423	1-216-081-00	RES-CHIP	22K	5%	1/10W
R424	1-247-804-11	CARBON	75	5%	1/4W
R425	1-216-113-00	RES-CHIP	470K	5%	1/10W
R426	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R427	1-216-037-00	RES-CHIP	330	5%	1/10W
R428	1-216-081-00	RES-CHIP	22K	5%	1/10W
R429	1-216-037-00	RES-CHIP	330	5%	1/10W
R431	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R432	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R434	1-216-097-11	RES-CHIP	100K	5%	1/10W
R435	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R436	1-216-095-00	RES-CHIP	82K	5%	1/10W
R437	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R438	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R439	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R441	1-216-025-11	RES-CHIP	100	5%	1/10W
R442	1-216-033-00	RES-CHIP	220	5%	1/10W
R443	1-216-025-11	RES-CHIP	100	5%	1/10W
R444	1-216-025-11	RES-CHIP	100	5%	1/10W
R445	1-249-413-11	CARBON	470	5%	1/4W
R446	1-216-041-00	RES-CHIP	470	5%	1/10W
R447	1-216-025-11	RES-CHIP	100	5%	1/10W
R448	1-216-089-11	RES-CHIP	47K	5%	1/10W
R449	1-216-089-11	RES-CHIP	47K	5%	1/10W
R502	1-216-089-11	RES-CHIP	47K	5%	1/10W
R503	1-216-081-00	RES-CHIP	22K	5%	1/10W
R504	1-216-097-11	RES-CHIP	100K	5%	1/10W
R507	1-216-049-11	RES-CHIP	1K	5%	1/10W
R508	1-216-049-11	RES-CHIP	1K	5%	1/10W
R510	1-216-097-11	RES-CHIP	100K	5%	1/10W
R512	1-215-888-00	METAL OXIDE	220	5%	2W
R513	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R514	1-216-073-00	RES-CHIP	10K	5%	1/10W
R515	1-216-377-11	METAL OXIDE	4.7	5%	2W
R516	1-249-385-11	CARBON	2.2	5%	1/4W
R517	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R518	1-216-073-00	RES-CHIP	10K	5%	1/10W
R519	1-249-382-11	CARBON	1.2	5%	1/4W
R520	1-216-089-11	RES-CHIP	47K	5%	1/10W
R601	1-216-033-00	RES-CHIP	220	5%	1/10W
R602	1-216-689-11	METAL CHIP	39K	0.50%	1/10W
R603	⚠ 1-218-265-21	METAL	8.2M	5%	1W
R605	⚠ 1-220-778-11	FUSIBLE	0.1	10%	1/2W
R606	1-247-895-91	CARBON	470K	5%	1/4W
R607	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R608	1-216-077-91	RES-CHIP	15K	5%	1/10W
R609	1-215-917-11	METAL OXIDE	1K	5%	3W
R610	1-216-654-11	METAL CHIP	1.3K	0.50%	1/10W
R611	1-216-077-91	RES-CHIP	15K	5%	1/10W
R612	1-249-480-11	CARBON	3.3	5%	1/2W
R613	1-216-037-00	RES-CHIP	330	5%	1/10W
R614	1-249-417-11	CARBON	1K	5%	1/4W
R615	1-216-073-00	RES-CHIP	10K	5%	1/10W
R616	1-249-417-11	CARBON	1K	5%	1/4W
R617	1-216-049-11	RES-CHIP	1K	5%	1/10W
R618	1-216-049-11	RES-CHIP	1K	5%	1/10W
R619	1-216-073-00	RES-CHIP	10K	5%	1/10W
R620	1-216-077-91	RES-CHIP	15K	5%	1/10W
R621	1-249-401-11	CARBON	47	5%	1/4W
R622	1-216-073-00	RES-CHIP	10K	5%	1/10W
R623	1-216-049-11	RES-CHIP	1K	5%	1/10W
R624	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R625	1-216-041-00	RES-CHIP	470	5%	1/10W
R626	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R627	1-249-377-11	CARBON	0.47	5%	1/4W
R628	1-216-017-91	RES-CHIP	47	5%	1/10W
R629	1-216-049-11	RES-CHIP	1K	5%	1/10W
R630	1-247-903-00	CARBON	1M	5%	1/4W
R631	1-216-013-00	RES-CHIP	33	5%	1/10W
R632	1-216-081-00	RES-CHIP	22K	5%	1/10W
R633	1-216-077-91	RES-CHIP	15K	5%	1/10W
R634	1-216-049-11	RES-CHIP	1K	5%	1/10W
R635	1-216-077-91	RES-CHIP	15K	5%	1/10W
R636	1-215-927-00	METAL OXIDE	47K	5%	3W
R637	1-216-009-91	RES-CHIP	22	5%	1/10W
R638	1-249-405-11	CARBON	100	5%	1/4W
R639	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R640	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R641	1-216-025-11	RES-CHIP	100	5%	1/10W
R642	1-216-675-91	METAL CHIP	10K	0.50%	1/4W
R643	1-216-695-11	METAL CHIP	68K	0.50%	1/4W
R644	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R645	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R646	1-216-045-00	RES-CHIP	680	5%	1/10W
R647	1-249-389-11	CARBON	4.7	5%	1/4W
R648	1-216-361-00	METAL OXIDE	0.22	5%	2W
R649	1-216-361-00	METAL OXIDE	0.22	5%	2W
R650	1-216-089-11	RES-CHIP	47K	5%	1/10W
R651	1-216-013-00	RES-CHIP	33	5%	1/10W
R652	1-216-045-00	RES-CHIP	680	5%	1/10W
R653	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R655	1-216-073-00	RES-CHIP	10K	5%	1/10W
R656	1-216-077-91	RES-CHIP	15K	5%	1/10W
R657	1-215-469-00	METAL	100K	1%	1/4W
R658	1-216-073-00	RES-CHIP	10K	5%	1/10W
R659	1-216-077-91	RES-CHIP	15K	5%	1/10W
R660	1-216-033-00	RES-CHIP	220	5%	1/10W
R661	1-216-033-00	RES-CHIP	220	5%	1/10W
R662	1-249-409-11	CARBON	220	5%	1/4W
R663	1-249-409-11	CARBON	220	5%	1/4W
R665	1-260-123-11	CARBON	100K	5%	1/2W
R666	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R667	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R668	1-216-488-11	METAL OXIDE	18K	5%	3W
R669	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R670	1-216-679-11	METAL CHIP	15K	0.50%	1/10W

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REF. NO.	PART NO.	DESCRIPTION			REMARK
R671	1-216-033-00	RES-CHIP	220	5% 1/10W	
R673	1-216-113-00	RES-CHIP	470K	5% 1/10W	
R674	1-216-488-11	METAL OXIDE	18K	5% 3W	
R675	1-216-049-11	RES-CHIP	1K	5% 1/10W	
R676	1-216-101-00	RES-CHIP	150K	5% 1/10W	
R677	1-202-962-11	CEMENTED	3.3	5% 10W	(14inch model)
R678	1-216-081-00	RES-CHIP	22K	5% 1/10W	
R679	1-216-368-11	METAL OXIDE	0.82	5% 2W	
R680	1-247-883-00	CARBON	150K	5% 1/4W	
R681	1-216-065-91	RES-CHIP	4.7K	5% 1/10W	
R682	1-247-885-00	CARBON	180K	5% 1/4W	
R683	1-247-711-11	CARBON	680	5% 1/4W	
R684	1-216-073-00	RES-CHIP	10K	5% 1/10W	
R685	1-216-081-00	RES-CHIP	22K	5% 1/10W	
R686	1-216-049-11	RES-CHIP	1K	5% 1/10W	
R687	1-216-073-00	RES-CHIP	10K	5% 1/10W	
R688	1-249-435-11	CARBON	33K	5% 1/4W	
R689	1-216-049-11	RES-CHIP	1K	5% 1/10W	
R801	1-218-768-11	METAL CHIP	470K	0.50% 1/10W	(14inch model)
R801	1-218-764-11	METAL CHIP	330K	0.50% 1/10W	(21inch model)
R802	1-216-447-00	METAL OXIDE	27	5% 2W	(14inch model)
R802	1-215-884-11	METAL OXIDE	47	5% 2W	(21inch model)
R803	1-249-377-11	CARBON	0.47	5% 1/4W	
R805	1-214-775-00	METAL	82K	1% 1/4W	(14inch model)
R805	1-214-765-00	METAL	33K	1% 1/4W	(21inch model)
R806	1-249-377-11	CARBON	0.47	5% 1/4W	
R807	1-215-887-00	METAL OXIDE	150	5% 2W	
R808	1-214-775-00	METAL	82K	1% 1/4W	(14inch model)
R808	1-214-907-00	METAL	56K	1% 1/2W	(21inch model)
R809	1-216-085-00	RES-CHIP	33K	5% 1/10W	
R810	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	(21inch model)
R811	1-216-057-00	RES-CHIP	2.2K	5% 1/10W	
R812	1-216-687-11	METAL CHIP	33K	0.50% 1/10W	
R814	1-216-295-11	SHORT	0		
R816	1-216-687-11	METAL CHIP	33K	0.50% 1/10W	
R817	1-216-057-00	RES-CHIP	2.2K	5% 1/10W	
R818	1-216-681-11	METAL CHIP	18K	0.50% 1/10W	
R821	1-249-391-11	CARBON	6.8	5% 1/4W	
R822	1-249-411-11	CARBON	330	5% 1/4W	
R823	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R824	1-218-753-11	METAL CHIP	110K	0.50% 1/10W	(14inch model)
R824	1-216-699-91	METAL CHIP	100K	0.50% 1/10W	(21inch model)
R825	1-216-073-00	RES-CHIP	10K	5% 1/10W	
R826	1-215-892-11	METAL OXIDE	1K	5% 2W	
R827	1-216-073-00	RES-CHIP	10K	5% 1/10W	
R828	1-216-097-11	RES-CHIP	100K	5% 1/10W	
R830	1-216-689-11	METAL CHIP	39K	0.50% 1/10W	(14inch model)
R830	1-216-691-11	METAL CHIP	47K	0.50% 1/10W	(21inch model)
R831	1-218-769-11	METAL CHIP	510K	0.50% 1/10W	(14inch model)
R831	1-216-696-11	METAL CHIP	75K	0.50% 1/10W	(21inch model)
R832	1-216-675-91	METAL CHIP	10K	0.50% 1/10W	(14inch model)
R832	1-216-661-11	METAL CHIP	2.7K	0.50% 1/10W	(21inch model)
R833	1-216-699-91	METAL CHIP	100K	0.50% 1/10W	
R835	1-216-057-00	RES-CHIP	2.2K	5% 1/10W	
R837	1-216-683-11	METAL CHIP	22K	0.50% 1/10W	
R838	1-215-886-11	METAL OXIDE	100	5% 2W	(21inch model)
R839	1-216-349-00	METAL OXIDE	1	5% 1W	
R841	1-260-338-51	CARBON	6.8K	5% 1/2W	
R842	1-215-898-11	METAL OXIDE	10K	5% 2W	
R843	1-260-083-11	CARBON	47	5% 1/2W	

<RELAY>

RY601	⚠ 1-755-198-12	RELAY, AC POWER	
RY602	⚠ 1-755-198-12	RELAY, AC POWER	
RY603	⚠ 1-755-245-11	RELAY, AC POWER	

<SWITCH>

S801	1-572-707-11	SWITCH, LEVER (H-CENT)	

<TRANSFORMER>

T602	⚠ 1-435-635-11	TRANSFORMER, CONVERTER (SRT)	
T604	⚠ 1-435-634-11	TRANSFORMER, CONVERTER (SRT)	
T801	⚠ 8-598-852-00	TRANSFORMER ASSY, FLYBACK (NX-1912//M)	(14inch model)
T801	⚠ 1-453-314-11	TRANSFORMER ASSY, FLYBACK	(21inch model)
T803	1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE	

<THERMISTOR>

TH601	⚠ 1-803-586-11	THERMISTOR, NTC
THP601	⚠ 1-809-827-11	THERMISTOR, POSITIVE

<TUNER>

TU101	8-598-528-00	FRONTEND BTF-EU602 (VTR)	(UK model)
TU101	8-598-532-00	FRONTEND BTF-EC402 (VTR)	(AEP/ESP model)
TU101	8-598-536-00	FRONTEND BTF-EF412 (VTR)	(FR model)
TU102	8-598-528-00	FRONTEND BTF-EU602 (TV)	(UK model)
TU102	8-598-532-00	FRONTEND BTF-EC402 (TV)	(AEP/ESP model)
TU102	8-598-536-00	FRONTEND BTF-EF412 (TV)	(FR model)

<CRYSTAL>

X301	1-567-504-11	OSCILLATOR, CRYSTAL
X302	1-567-505-11	OSCILLATOR, CRYSTAL

****

*	A-1639-006-A	CVM BOARD, COMPLETE (14inch model)
		**********
*	A-1639-005-A	CVM BOARD, COMPLETE (21inch model)
		**********
	4-352-844-01	PIN, LEAD, COATING (LP701, LP702, LP703)
	4-382-854-01	SCREW (M3X8), P, SW (+) (Q1711, Q1712)

<CAPACITOR>

C701	1-137-043-11	MYLAR	0.0047UF	10.00%	400V
C702	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V (14inch model)
C702	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V (21inch model)
C703	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V (14inch model)
C703	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V (21inch model)
C704	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C705	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V

CVM

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C708	1-162-114-00	CERAMIC 0.0047UF 2KV	
C710	1-136-189-00	MYLAR 0.1UF 10.00% 250V	
C712	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	(14inch model)
C712	1-163-255-11	CERAMIC CHIP 150PF 5.00% 50V	(21inch model)
C713	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C714	1-104-665-11	ELECT 100UF 20.00% 16V	
C715	1-163-113-00	CERAMIC CHIP 68PF 5.00% 50V	(21inch model)
C716	1-163-113-00	CERAMIC CHIP 68PF 5.00% 50V	(21inch model)
C717	1-163-005-11	CERAMIC CHIP 470PF 10.00% 50V	
C718	1-163-005-11	CERAMIC CHIP 470PF 10.00% 50V	
C719	1-163-005-11	CERAMIC CHIP 470PF 10.00% 50V	
C720	1-163-113-00	CERAMIC CHIP 68PF 5.00% 50V	(21inch model)
C723	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C724	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C725	1-163-251-11	CERAMIC CHIP 100PF 5.00% 50V	
C1701	1-104-665-11	ELECT 100UF 20.00% 16V	
C1702	1-163-235-11	CERAMIC CHIP 22PF 5.00% 50V	(21inch model)
C1703	1-126-925-11	ELECT 470UF 20.00% 10V	
C1704	1-163-021-91	CERAMIC CHIP 0.01UF 10.00% 50V	
C1705	1-163-239-11	CERAMIC CHIP 33PF 5.00% 50V	
C1706	1-126-925-11	ELECT 470UF 20.00% 10V	
C1709	1-126-964-11	ELECT 10UF 20.00% 50V	
C1710	1-106-375-12	MYLAR 0.022UF 10.00% 250V	
C1711	1-106-375-12	MYLAR 0.022UF 10.00% 250V	
C1712	1-136-203-11	MYLAR 0.01UF 10.00% 250V	
C1713	1-104-664-11	ELECT 47UF 20.00% 25V	
C1715	1-104-999-11	MYLAR 0.1UF 5.00% 200V	
C1716	1-107-639-11	ELECT 47UF 20.00% 160V	
C1717	1-104-664-11	ELECT 47UF 20.00% 25V	
C1803	1-163-033-91	CERAMIC CHIP 0.022UF 50V	(21inch model)
C1804	1-164-346-11	CERAMIC CHIP 1UF 16V	(21inch model)
		<CONNECTOR>	
CN702	1-695-915-11	TAB (CONTACT)	
CN703	*1-564-509-11	PLUG, CONNECTOR 6P	
CN706	1-695-915-11	TAB (CONTACT)	
CN707	*1-564-508-11	PLUG, CONNECTOR 5P	
CN1703	*1-564-506-11	PLUG, CONNECTOR 3P	
CN1705	*1-564-509-11	PLUG, CONNECTOR 6P	
CN1801	*1-564-506-11	PLUG, CONNECTOR 3P	(21inch model)
		<DIODE>	
D702	8-719-988-61	DIODE 1SS355TE-17	
D703	8-719-988-61	DIODE 1SS355TE-17	
D704	8-719-988-61	DIODE 1SS355TE-17	
D705	8-719-988-61	DIODE 1SS355TE-17	
D706	8-719-988-61	DIODE 1SS355TE-17	
D707	8-719-988-61	DIODE 1SS355TE-17	
D708	8-719-988-61	DIODE 1SS355TE-17	
D709	8-719-988-61	DIODE 1SS355TE-17	
D710	8-719-988-61	DIODE 1SS355TE-17	
D711	8-719-988-61	DIODE 1SS355TE-17	
D712	8-719-988-61	DIODE 1SS355TE-17	
D714	8-719-988-61	DIODE 1SS355TE-17	
D715	8-719-988-61	DIODE 1SS355TE-17	
D716	8-719-988-61	DIODE 1SS355TE-17	
D717	8-719-988-61	DIODE 1SS355TE-17	
D718	8-719-988-61	DIODE 1SS355TE-17	
D719	8-719-988-61	DIODE 1SS355TE-17	
D721	8-719-988-61	DIODE 1SS355TE-17	
D722	8-719-988-61	DIODE 1SS355TE-17	

REF. NO.	PART NO.	DESCRIPTION	REMARK
D1703	8-719-988-61	DIODE 1SS355TE-17	
D1704	1-216-295-11	SHORT 0	
D1705	1-216-295-11	SHORT 0	
D1706	8-719-988-61	DIODE 1SS355TE-17	
D1707	8-719-988-61	DIODE 1SS355TE-17	
D1710	8-719-109-89	ZENER DIODE RD5.6ESB2	
D1711	8-719-109-89	ZENER DIODE RD5.6ESB2	
D1801	8-719-977-28	ZENER DIODE DTZ10B	(21inch model)
D1802	8-719-977-28	ZENER DIODE DTZ10B	(21inch model)
D1803	8-719-977-28	ZENER DIODE DTZ10B	(21inch model)
		<FUSE>	
F1701	⚠1-576-470-21	LINK, FUSE (6.3A)	
		<FERRITE BEAD>	
FB1701	1-412-911-11	FERRITE 0UH	
		<IC>	
IC1801	8-759-603-37	IC M5216P	(21inch model)
		<JACK>	
J701	⚠1-251-595-11	SOCKET, PICTURE TUBE	
		<COIL>	
L701	1-412-947-11	INDUCTOR 4.7UH	(21inch model)
L702	1-412-947-11	INDUCTOR 4.7UH	(21inch model)
L703	1-412-530-31	INDUCTOR 27UH	(14inch model)
L703	1-412-533-21	INDUCTOR 47UH	(21inch model)
L704	1-414-183-41	INDUCTOR 10UH	
L705	1-412-947-11	INDUCTOR 4.7UH	(21inch model)
L706	1-414-183-41	INDUCTOR 10UH	
L1701	1-414-183-41	INDUCTOR 10UH	
L1703	1-412-953-11	INDUCTOR 15UH	(21inch model)
L1704	1-412-545-11	INDUCTOR 470UH	
		<TRANSISTOR>	
Q701	8-729-046-28	TRANSISTOR BF420-126	
Q702	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q703	8-729-046-28	TRANSISTOR BF420-126	
Q704	8-729-200-17	TRANSISTOR 2SA1091-O	
Q705	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q706	8-729-046-28	TRANSISTOR BF420-126	
Q707	8-729-200-17	TRANSISTOR 2SA1091-O	
Q708	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q709	8-729-046-28	TRANSISTOR BF420-126	
Q710	8-729-200-17	TRANSISTOR 2SA1091-O	
Q711	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q712	8-729-046-28	TRANSISTOR BF420-126	
Q713	8-729-046-28	TRANSISTOR BF420-126	
Q714	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
Q715	8-729-200-17	TRANSISTOR 2SA1091-O	
Q716	8-729-200-17	TRANSISTOR 2SA1091-O	
Q717	8-729-200-17	TRANSISTOR 2SA1091-O	
Q1701	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1704	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1705	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1706	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1707	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1708	8-729-026-39	TRANSISTOR 2SA933AS-QT	
Q1709	8-729-049-09	TRANSISTOR BC327-25	
Q1710	8-729-049-10	TRANSISTOR BC337-25	
Q1711	8-729-017-05	TRANSISTOR 2SA1837	
Q1712	8-729-017-06	TRANSISTOR 2SC4793	

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CVM

REF. NO.	PART NO.	DESCRIPTION			REMARK
		<RESISTOR>			
R701	1-247-895-91	CARBON	470K	5%	1/4W
R702	1-215-900-11	METAL OXIDE	22K	5%	2W
R703	1-247-807-31	CARBON	100	5%	1/4W
R705	1-215-871-11	METAL OXIDE	2.2K	5%	1W
R706	1-216-033-00	RES-CHIP	220	5%	1/10W
R707	1-216-043-91	RES-CHIP	560	5%	1/10W (14inch model)
R707	1-216-039-00	RES-CHIP	390	5%	1/10W (21inch model)
R708	1-216-017-91	RES-CHIP	47	5%	1/10W
R709	1-216-049-11	RES-CHIP	1K	5%	1/10W
R710	1-216-113-00	RES-CHIP	470K	5%	1/10W
R712	1-215-871-11	METAL OXIDE	2.2K	5%	1W
R713	1-216-113-00	RES-CHIP	470K	5%	1/10W
R714	1-215-900-11	METAL OXIDE	22K	5%	2W
R715	1-247-807-31	CARBON	100	5%	1/4W
R716	1-216-033-00	RES-CHIP	220	5%	1/10W
R717	1-216-043-91	RES-CHIP	560	5%	1/10W (14inch model)
R717	1-216-039-00	RES-CHIP	390	5%	1/10W (21inch model)
R718	1-202-814-11	SOLID	33K	10%	1/2W
R719	1-216-017-91	RES-CHIP	47	5%	1/10W
R721	1-247-807-31	CARBON	100	5%	1/4W
R722	1-216-049-11	RES-CHIP	1K	5%	1/10W
R723	1-216-049-11	RES-CHIP	1K	5%	1/10W
R725	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R726	1-215-871-11	METAL OXIDE	2.2K	5%	1W
R727	1-216-033-00	RES-CHIP	220	5%	1/10W
R729	1-216-043-11	RES-CHIP	560	5%	1/10W (14inch model)
R729	1-216-039-00	RES-CHIP	390	5%	1/10W (21inch model)
R730	1-216-017-91	RES-CHIP	47	5%	1/10W
R732	1-216-121-91	RES-CHIP	1M	5%	1/10W
R733	1-216-097-11	RES-CHIP	100K	5%	1/10W
R734	1-247-807-31	CARBON	100	5%	1/4W
R736	1-215-900-11	METAL OXIDE	22K	5%	2W
R737	1-216-117-00	RES-CHIP	680K	5%	1/10W
R741	1-202-549-00	SOLID	100	20%	1/2W
R746	1-216-049-11	RES-CHIP	1K	5%	1/10W
R750	1-216-049-11	RES-CHIP	1K	5%	1/10W
R751	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1701	1-216-033-00	RES-CHIP	220	5%	1/10W
R1702	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1703	1-247-807-31	CARBON	100	5%	1/4W
R1704	1-247-807-31	CARBON	100	5%	1/4W
R1705	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1706	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1707	1-249-436-11	CARBON	39K	5%	1/4W
R1708	1-249-436-11	CARBON	39K	5%	1/4W
R1709	1-216-025-11	RES-CHIP	100	5%	1/10W
R1710	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1711	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1712	1-216-041-00	RES-CHIP	470	5%	1/10W
R1713	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1714	1-216-019-00	RES-CHIP	56	5%	1/10W
R1715	1-216-029-00	RES-CHIP	150	5%	1/10W
R1716	1-216-031-00	RES-CHIP	180	5%	1/10W
R1717	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R1718	1-260-091-11	CARBON	220	5%	1/2W
R1719	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1721	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1722	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1723	1-216-107-00	RES-CHIP	270K	5%	1/10W
R1724	1-216-107-00	RES-CHIP	270K	5%	1/10W
R1725	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1726	1-249-433-11	CARBON	22K	5%	1/4W
R1727	1-249-407-11	CARBON	150	5%	1/4W
R1728	1-249-407-11	CARBON	150	5%	1/4W
R1729	1-249-387-11	CARBON	3.3	5%	1/4W
R1730	1-249-387-11	CARBON	3.3	5%	1/4W
R1731	1-216-487-11	METAL OXIDE	12K	5%	3W
R1732	1-215-867-00	METAL OXIDE	470	5%	1W
R1801	1-216-049-11	RES-CHIP	1K	5%	1/10W (21inch model)
R1802	1-216-049-11	RES-CHIP	1K	5%	1/10W (21inch model)
R1805	1-216-073-00	RES-CHIP	10K	5%	1/10W (21inch model)
R1806	1-216-117-00	RES-CHIP	680K	5%	1/10W (21inch model)
R1807	1-216-073-00	RES-CHIP	10K	5%	1/10W (21inch model)
R1808	1-216-073-00	RES-CHIP	10K	5%	1/10W (21inch model)
R1809	1-216-073-00	RES-CHIP	10K	5%	1/10W (21inch model)
R1810	1-216-073-00	RES-CHIP	10K	5%	1/10W (21inch model)
		<VARIABLE RESISTOR>			
RV702	⚠ 1-241-656-21	RES, ADJ, METAL FILM 110M (H-STAT)			

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MA10

VIDEO BLOCK

REF. NO.	PART NO.	DESCRIPTION			REMARK
	* A-1635-042-A	MA10 BOARD, COMPLETE (KV-14/21FV1D,-14/21FV1U)			
		**********			
	* A-1635-043-A	MA10 BOARD, COMPLETE (KV-14/21FV1E)			
		**********			
	* A-1635-044-A	MA10 BOARD, COMPLETE (KV-14/21FV1B)			
		**********			
	3-960-273-11	SPACER, TOP END (Q452, Q453)			
	* 3-960-274-01	SPACER, LED (D451)			
	4-352-844-01	PIN, LEAD, COATING (LP001, LP002)			
	* 4-374-846-01	COVER, CAPACITOR, CAP TYPE (VDR601)			
	4-382-854-01	SCREW (M3X8), P, SW (+) (IC201)			
		<CAPACITOR>			
C001	1-163-104-00	CERAMIC CHIP	30PF	5.00% 50V	
C002	1-163-235-11	CERAMIC CHIP	22PF	5.00% 50V	
C004	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C005	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C006	1-163-241-11	CERAMIC CHIP	39PF	5.00% 50V	
C007	1-163-241-11	CERAMIC CHIP	39PF	5.00% 50V	
C008	1-107-823-11	CERAMIC CHIP	0.47UF	10.00% 16V	
C009	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C010	1-163-989-11	CERAMIC CHIP	0.033UF	10.00% 25V (except ESP model)	
C013	1-126-964-11	ELECT	10UF	20.00% 50V	
C014	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C015	1-124-584-00	ELECT	100UF	20.00% 10V	
C016	1-163-037-11	CERAMIC CHIP	0.022UF	10.00% 50V (except ESP model)	
C017	1-163-255-11	CERAMIC CHIP	150PF	5.00% 50V (except ESP model)	
C018	1-163-809-11	CERAMIC CHIP	0.047UF	10.00% 25V (except ESP model)	
C019	1-163-989-11	CERAMIC CHIP	0.033UF	10.00% 25V (except ESP model)	
C021	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C022	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C024	1-163-259-91	CERAMIC CHIP	220PF	5.00% 50V	
C025	1-163-259-91	CERAMIC CHIP	220PF	5.00% 50V	
C033	1-124-584-00	ELECT	100UF	20.00% 10V (except ESP model)	
C099	1-163-038-11	CERAMIC CHIP	0.1UF	25V (except ESP model)	
C208	1-126-963-11	ELECT	4.7UF	20.00% 50V	
C209	1-124-252-00	ELECT	0.33UF	20.00% 50V	
C210	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C211	1-119-821-11	ELECT MELF	2.2UF	20% 50V	
C214	1-104-666-11	ELECT	220UF	20.00% 25V	
C216	1-126-964-11	ELECT	10UF	20.00% 50V	
C217	1-126-959-11	ELECT	0.47UF	20.00% 50V	
C218	1-126-942-61	ELECT	1000UF	20.00% 25V	
C219	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C220	1-126-942-61	ELECT	1000UF	20.00% 25V	
C258	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C259	1-107-791-11	DOUBLE LAYER	0.33F	5.5V	
C260	1-104-665-11	ELECT	100UF	20.00% 10V	
C262	1-163-091-00	CERAMIC CHIP	8PF	0.25PF 50V	
C263	1-163-091-00	CERAMIC CHIP	8PF	0.25PF 50V	
C401	1-163-035-00	CERAMIC CHIP	0.047UF	50V	
C402	1-104-664-11	ELECT	47UF	20.00% 10V	
C405	1-104-664-11	ELECT	47UF	20.00% 16V	
C406	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C407	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C408	1-164-004-11	CERAMIC CHIP	0.1UF	10.00% 25V	
C409	1-104-664-11	ELECT	47UF	20.00% 10V	
C410	1-163-035-00	CERAMIC CHIP	0.047UF	50V	
C412	1-126-960-11	ELECT	1UF	20.00% 50V	
C413	1-163-263-11	CERAMIC CHIP	330PF	5.00% 50V	
C414	1-104-664-11	ELECT	47UF	20.00% 10V	
C415	1-130-489-00	MYLAR	0.033UF	5.00% 50V	
C416	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C417	1-128-551-11	ELECT	22UF	20.00% 25V	
C418	1-130-488-00	MYLAR	0.027UF	5.00% 50V	
C419	1-126-961-11	ELECT	2.2UF	20.00% 50V	
C421	1-104-665-11	ELECT	100UF	20.00% 10V	
C422	1-163-018-00	CERAMIC CHIP	0.0056UF	10.00% 50V	
C424	1-126-960-11	ELECT	1UF	20.00% 50V	
C425	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C430	1-163-227-11	CERAMIC CHIP	10PF	0.50PF 50V	
C431	1-163-231-11	CERAMIC CHIP	15PF	5.00% 50V	
C432	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C435	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C436	1-124-584-00	ELECT	100UF	20.00% 10V	
C441	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C455	1-126-924-11	ELECT	330UF	20.00% 6.3V	
C456	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C457	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C458	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C460	1-163-009-11	CERAMIC CHIP	0.001UF	10.00% 50V	
C701	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C702	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C705	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C706	1-163-235-11	CERAMIC CHIP	22PF	5.00% 50V	
C707	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C709	1-163-241-11	CERAMIC CHIP	39PF	5.00% 50V	
C711	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C712	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C713	1-163-241-11	CERAMIC CHIP	39PF	5.00% 50V	
C716	1-163-033-91	CERAMIC CHIP	0.022UF	50V	
C717	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C718	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C719	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C720	1-104-665-11	ELECT	100UF	20.00% 10V	
C722	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C723	1-163-038-11	CERAMIC CHIP	0.1UF	25V	
C724	1-104-665-11	ELECT	100UF	20.00% 10V	
C725	1-163-038-91	CERAMIC CHIP	0.1UF	25V	
C726	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C727	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C728	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C801	1-164-492-11	CERAMIC CHIP	0.15UF	10.00% 16V	
C804	1-163-241-11	CERAMIC CHIP	39PF	5.00% 50V	
C807	1-163-227-11	CERAMIC CHIP	10PF	0.50PF 50V	
C808	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C813	1-163-251-11	CERAMIC CHIP	100PF	5.00% 50V	
C815	1-163-239-11	CERAMIC CHIP	33PF	5.00% 50V	
C816	1-163-037-11	CERAMIC CHIP	0.022UF	10.00% 50V	
C817	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C818	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C819	1-163-131-00	CERAMIC CHIP	390PF	5.00% 50V	
C820	1-163-809-11	CERAMIC CHIP	0.047UF	10.00% 25V	
C822	1-128-551-11	ELECT	22UF	20.00% 25V	
C823	1-126-960-11	ELECT	1UF	20.00% 50V	
C824	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C825	1-163-257-11	CERAMIC CHIP	180PF	5.00% 50V	
C828	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C829	1-164-346-11	CERAMIC CHIP	1UF	16V	
C832	1-164-346-11	CERAMIC CHIP	1UF	16V	
C834	1-163-038-91	CERAMIC CHIP	0.1UF	25V	
C835	1-163-038-91	CERAMIC CHIP	0.1UF	25V	
C837	1-104-664-11	ELECT	47UF	20.00% 10V	
C840	1-104-665-11	ELECT	100UF	20.00% 10V	
C841	1-126-964-11	ELECT	10UF	20.00% 50V	
C842	1-163-031-11	CERAMIC CHIP	0.01UF	50V	
C843	1-104-665-11	ELECT	100UF	20.00% 10V	
C844	1-126-964-11	ELECT	10UF	20.00% 50V	
C845	1-164-346-11	CERAMIC CHIP	1UF	16V	
C846	1-163-021-91	CERAMIC CHIP	0.01UF	10.00% 50V	

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MA10

REF. NO.	PART NO.	DESCRIPTION			REMARK
C847	1-163-038-11	CERAMIC CHIP	0.1UF		25V
C848	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C849	1-126-960-11	ELECT	1UF	20.00%	50V
C850	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C851	1-163-809-11	CERAMIC CHIP	0.047UF	10.00%	25V
C852	1-104-664-11	ELECT	47UF	20.00%	10V
C853	1-163-038-11	CERAMIC CHIP	0.1UF		25V
C854	1-126-960-11	ELECT	1UF	20.00%	50V
C855	1-163-809-11	CERAMIC CHIP	0.047UF	10.00%	25V
C856	1-126-960-11	ELECT	1UF	20.00%	50V
C857	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C858	1-126-960-11	ELECT	1UF	20.00%	50V
C859	1-163-038-11	CERAMIC CHIP	0.1UF		25V
C860	1-164-346-11	CERAMIC CHIP	1UF		16V
C861	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C862	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C863	1-104-664-11	ELECT	47UF	20.00%	10V
C864	1-163-016-00	CERAMIC CHIP	0.0039UF	10.00%	50V
C865	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C866	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C867	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C868	1-163-235-11	CERAMIC CHIP	22PF	5.00%	50V
C879	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V
C901	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C902	1-164-346-11	CERAMIC CHIP	1UF		16V
C903	1-163-239-11	CERAMIC CHIP	33PF	5.00%	50V
C904	1-163-239-11	CERAMIC CHIP	33PF	5.00%	50V
C905	1-126-925-11	ELECT	470UF	20.00%	10V
C906	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C907	1-164-346-11	CERAMIC CHIP	1UF		16V
C908	1-126-925-11	ELECT	470UF	20.00%	10V
C909	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C910	1-164-346-11	CERAMIC CHIP	1UF		16V
C911	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C912	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C913	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V
C1001	1-137-397-11	MYLAR	0.047UF	5.00%	100V
C1002	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C1003	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1004	1-104-664-11	ELECT	47UF	20.00%	10V
C1006	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1007	1-104-664-11	ELECT	47UF	20.00%	10V
C1008	1-126-963-11	ELECT	4.7UF	20.00%	50V
C1009	1-126-964-11	ELECT	10UF	20.00%	50V
C1010	1-137-150-11	MYLAR	0.01UF	5.00%	50V
C1011	1-163-011-11	CERAMIC CHIP	0.0015UF	10.00%	50V
C1012	1-163-011-11	CERAMIC CHIP	0.0015UF	10.00%	50V
C1013	1-164-346-11	CERAMIC CHIP	1UF		16V
C1014	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C1015	1-126-960-11	ELECT	1UF	20.00%	50V
C1016	1-104-664-11	ELECT	47UF	20.00%	16V
C1017	1-126-963-11	ELECT	4.7UF	20.00%	50V
C1019	1-104-664-11	ELECT	47UF	20.00%	10V
C1020	1-126-960-11	ELECT	1UF	20.00%	50V
C1021	1-126-964-11	ELECT	10UF	20.00%	50V
C1101	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C1102	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C1103	1-163-033-91	CERAMIC CHIP	0.022UF		50V
C1104	1-163-038-11	CERAMIC CHIP	0.1UF		25V
C1105	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1106	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V
C1107	1-163-019-00	CERAMIC CHIP	0.0068UF	10.00%	50V
C1701	⚠ 1-136-516-12	FILM	0.1UF	20.00%	300V
C1702	⚠ 1-136-516-12	FILM	0.1UF	20.00%	300V
C1703	⚠ 1-113-924-91	CERAMIC	0.0047UF	20.00%	250V
C1801	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (FR model)
C1802	1-163-255-11	CERAMIC CHIP	150PF	5.00%	50V (FR model)
C1803	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V (FR model)
C1804	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V (FR model)
C1805	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V (FR model)
C1806	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V (FR model)
C1807	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (FR model)
C1808	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (FR model)
C1809	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V (FR model)
C1810	1-163-031-11	CERAMIC CHIP	0.01UF		50V (FR model)
C1811	1-163-031-11	CERAMIC CHIP	0.01UF		50V (FR model)
C1812	1-104-664-11	ELECT	47UF	20.00%	10V (FR model)
C1813	1-163-249-11	CERAMIC CHIP	82PF	5.00%	50V (FR model)
C1814	1-163-137-00	CERAMIC CHIP	680PF	5.00%	50V (FR model)
C1815	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (FR model)
C1816	1-163-259-91	CERAMIC CHIP	220PF	5.00%	50V (FR model)
C1817	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V (FR model)
C1818	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V (FR model)
C1819	1-126-964-11	ELECT	10UF	20.00%	50V (FR model)
C1820	1-126-959-11	ELECT	0.47UF	20.00%	50V (FR model)
C1821	1-126-960-11	ELECT	1UF	20.00%	50V (FR model)
C1822	1-163-021-91	CERAMIC CHIP	0.01UF	10.00%	50V (FR model)
C1824	1-126-961-11	ELECT	2.2UF	20.00%	50V (FR model)
C1826	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V (FR model)

<CONNECTOR>

CN001	1-785-386-11	SOCKET, CONNECTOR 35P
CN002	* 1-766-715-11	CONNECTOR, BOARD TO BOARD 10P
CN251	* 1-564-506-11	PLUG, CONNECTOR 3P
CN401	1-695-328-11	SOCKET, CONNECTOR 5P
CN403	1-779-723-11	CONNECTOR, BOARD TO BOARD 9P
CN404	* 1-766-716-11	CONNECTOR, BOARD TO BOARD 3P
CN701	* 1-695-329-31	PIN, CONNECTOR (PC BOARD) 6P
CN702	* 1-560-892-00	PIN, CONNECTOR 4P
CN1001	* 1-564-506-11	PLUG, CONNECTOR 3P
CN1002	* 1-569-926-11	SOCKET, CONNECTOR 7P
CN1003	* 1-564-510-11	PLUG, CONNECTOR 7P
CN1004	1-784-038-11	CONNECTOR, BOARD TO BOARD 9P
CN1701	* 1-580-843-11	PIN, CONNECTOR (POWER)
CN1702	* 1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P
CN1703	1-695-915-11	TAB (CONTACT)

<DIODE>

D001	8-719-109-93	ZENER DIODE RD6.2ESB2
D002	8-719-921-54	ZENER DIODE MTZJ-6.2B
D004	8-719-921-54	ZENER DIODE MTZJ-6.2B
D005	8-719-921-40	ZENER DIODE MTZJ-4.7C
D006	8-719-921-44	ZENER DIODE MTZJ-5.1C
D007	8-719-911-19	DIODE 1SS119-25
D008	8-719-109-93	ZENER DIODE RD6.2ESB2
D009	8-719-988-61	DIODE 1SS355TE-17

MA10

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REF. NO.	PART NO.	DESCRIPTION	REMARK
D201	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D202	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D251	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D252	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D253	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D254	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D402	8-719-911-19	DIODE 1SS119-25	
D403	8-719-200-82	DIODE 11ES2	
D405	8-719-200-82	DIODE 11ES2	
D406	8-719-200-82	DIODE 11ES2	
D407	8-719-200-82	DIODE 11ES2	
D432	8-719-109-93	ZENER DIODE RD6.2ESB2	
D433	8-719-109-93	ZENER DIODE RD6.2ESB2	
D451	8-719-048-26	DIODE GL528V1	
D901	8-719-109-89	ZENER DIODE RD5.6ESB2	
D902	8-719-109-72	ZENER DIODE RD3.9ES-B2	
D903	8-719-914-43	DIODE DAN202K	
D904	8-719-109-89	ZENER DIODE RD5.6ESB2B	
D905	8-719-109-72	ZENER DIODE RD3.9ES-B2	
D1101	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D1102	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D1103	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D1104	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D1105	8-719-921-54	ZENER DIODE MTZJ-6.2B	
D1106	8-719-109-93	ZENER DIODE RD6.2ESB2	
D1107	8-719-109-93	ZENER DIODE RD6.2ESB2	
D1108	8-719-109-93	ZENER DIODE RD6.2ESB2	
D1109	8-719-109-93	ZENER DIODE RD6.2ESB2	
D1110	8-719-921-54	ZENER DIODE MTZJ-6.2B	
		<FUSE>	
F1701	⚠ 1-576-232-21	FUSE (H.B.C.) (5A/250V)	
FH1701	* 1-533-725-11	HOLDER, FUSE; F1701	
		<IC>	
IC001	8-752-917-77	IC CXP85452-233Q-TL	
IC002	8-759-527-77	IC M24C16-MN6T	
IC003	8-759-510-43	IC PST572C	
IC005	8-759-484-61	IC SDA5650X-GEG	(except ESP model)
IC201	8-759-442-73	IC TDA7494	
IC252	8-759-530-93	IC S-3510ACFJA-TB	
IC401	8-759-353-59	IC LB1643	
IC402	8-752-918-13	IC CXP87852-063Q-TL	
IC403	8-759-702-02	IC NJM062M	
IC404	8-759-510-73	IC BA10393F-E2	
IC405	8-759-438-83	IC BA6305F-E2	
IC701	8-759-357-84	IC HA118295NT	
IC801	8-759-439-50	IC LC89977M-TE-L	
IC802	8-759-479-25	IC LA71514M-MPB	
IC901	8-759-689-43	IC SAA5563PS/M3/0189	
IC902	8-759-591-02	IC L78L33ABZ-AP	
IC1001	8-759-499-30	IC BA7755AF-E2	
IC1101	8-742-014-21	HYB IC SBX1981-51(21)	
IC1801	8-759-438-17	IC LA7337	(FR model)
		<JACK>	
J1101	1-779-205-11	JACK, PIN 2P (VIDEO/AUDIO IN)	
J1102	1-568-267-21	JACK (HEADPHONE)	
		<CHIP CONDUCTOR>	
JR001	1-216-295-11	SHORT 0	
JR101	1-216-295-11	SHORT 0	
JR103	1-216-295-11	SHORT 0	
JR109	1-216-295-11	SHORT 0	
JR110	1-216-295-11	SHORT 0	
JR111	1-216-295-11	SHORT 0	
JR112	1-216-296-91	SHORT 0	
JR113	1-216-296-91	SHORT 0	
JR114	1-216-296-91	SHORT 0	
JR115	1-216-296-91	SHORT 0	
JR116	1-216-296-91	SHORT 0	
JR117	1-216-296-91	SHORT 0	
JR118	1-216-296-91	SHORT 0	
JR119	1-216-296-91	SHORT 0	
JR121	1-216-295-11	SHORT 0	
JR122	1-216-295-11	SHORT 0	
JR123	1-216-296-11	SHORT 0	
JR125	1-216-296-11	SHORT 0	
JR126	1-216-296-11	SHORT 0	
JR127	1-216-295-11	SHORT 0	
JR136	1-216-295-11	SHORT 0	
JR137	1-216-295-11	SHORT 0	
JR138	1-216-295-11	SHORT 0	
JR140	1-216-295-11	SHORT 0	
JR142	1-216-295-11	SHORT 0	
JR143	1-216-295-11	SHORT 0	
JR144	1-216-295-11	SHORT 0	
JR145	1-216-295-11	SHORT 0	
JR146	1-216-295-11	SHORT 0	
JR147	1-216-295-11	SHORT 0	
JR148	1-216-295-11	SHORT 0	
JR149	1-216-295-11	SHORT 0	
JR150	1-216-296-91	SHORT 0	
JR151	1-216-296-91	SHORT 0	
JR152	1-216-296-91	SHORT 0	
JR153	1-216-296-91	SHORT 0	
JR154	1-216-296-91	SHORT 0	
JR155	1-216-296-91	SHORT 0	
JR156	1-216-296-91	SHORT 0	
JR157	1-216-296-91	SHORT 0	
JR158	1-216-296-91	SHORT 0	
JR159	1-216-296-91	SHORT 0	
JR160	1-216-296-91	SHORT 0	
JR163	1-216-296-91	SHORT 0	
JR164	1-216-296-91	SHORT 0	
		<COIL>	
L001	1-469-013-31	INDUCTOR 18UH	
L002	1-410-509-11	INDUCTOR 10UH	
L003	1-414-856-11	INDUCTOR 10UH	(except ESP model)
L004	1-414-856-11	INDUCTOR 10UH	
L201	1-414-856-11	INDUCTOR 10UH	
L202	1-414-856-11	INDUCTOR 10UH	
L402	1-410-509-11	INDUCTOR 10UH	
L403	1-414-856-11	INDUCTOR 10UH	
L404	1-216-295-11	SHORT 0	
L431	1-410-509-11	INDUCTOR 10UH	
L703	1-408-615-31	INDUCTOR 100UH	
L704	1-408-615-31	INDUCTOR 100UH	
L801	1-410-439-11	INDUCTOR 470UH	
L803	1-408-977-21	INDUCTOR 39UH	
L804	1-408-977-21	INDUCTOR 39UH	
L808	1-414-184-41	INDUCTOR 15UH	
L809	1-408-615-31	INDUCTOR 100UH	
L811	1-414-185-41	INDUCTOR 22UH	
L812	1-414-185-41	INDUCTOR 22UH	
L813	1-414-187-11	INDUCTOR 47UH	
L815	1-414-190-31	INDUCTOR 120UH	
L901	1-414-856-11	INDUCTOR 10UH	
L902	1-414-856-11	INDUCTOR 10UH	
L903	1-414-856-11	INDUCTOR 10UH	
L1001	1-408-615-31	INDUCTOR 100UH	
L1003	1-420-872-00	COIL, AIR CORE	
L1004	1-414-187-11	INDUCTOR 47UH	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

MA10

REF. NO.	PART NO.	DESCRIPTION	REMARK
L1102	1-408-982-11	INDUCTOR 100UH	
L1103	1-414-177-11	INDUCTOR 1UH	
L1104	1-414-183-41	INDUCTOR 10UH	
L1801	1-408-968-21	INDUCTOR 6.8UH	(FR model)
L1802	1-408-974-21	INDUCTOR 22UH	(FR model)
L1803	* 1-408-980-21	INDUCTOR 68UH	(FR model)
L1804	1-408-975-21	INDUCTOR 27UH	(FR model)
L1806	1-408-978-21	INDUCTOR 47UH	(FR model)
		<PHOTO COUPLER>	
PH451	8-749-013-23	PHOTO INTERRUPTER GP3S120	
PH452	8-749-013-23	PHOTO INTERRUPTER GP3S120	
		<IC LINK>	
PS201	⚠ 1-532-605-91	LINK, IC (0.4A/150V)	
		<TRANSISTOR>	
Q003	8-729-421-22	TRANSISTOR UN2211	
Q005	8-729-421-19	TRANSISTOR UN2213	
Q006	8-729-421-19	TRANSISTOR UN2213	
Q008	8-729-421-19	TRANSISTOR UN2213	
Q009	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q201	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q402	8-729-424-18	TRANSISTOR UN2113	
Q451	8-729-281-53	TRANSISTOR 2SC1815-GR	
Q452	8-729-042-88	TRANSISTOR RPT-37PB3F	
Q453	8-729-042-88	TRANSISTOR RPT-37PB3F	
Q701	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q801	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q803	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q808	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q809	8-729-421-19	TRANSISTOR UN2213	
Q812	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q815	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q821	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q822	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q824	8-729-216-22	TRANSISTOR 2SA1162-G	
Q825	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q830	8-729-216-22	TRANSISTOR 2SA1162-G	
Q901	8-729-216-22	TRANSISTOR 2SA1162-G	
Q902	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q903	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q904	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q1001	8-729-802-91	TRANSISTOR 2SD879	
Q1002	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q1801	8-729-216-22	TRANSISTOR 2SA1162-G	(FR model)
Q1802	8-729-424-56	TRANSISTOR UN211L	(FR model)
Q1804	8-729-230-49	TRANSISTOR 2SC2712-YG	(FR model)
Q1805	8-729-230-49	TRANSISTOR 2SC2712-YG	(FR model)
Q1806	8-729-230-49	TRANSISTOR 2SC2712-YG	(FR model)
Q1807	8-729-421-19	TRANSISTOR UN2213	(FR model)
Q1808	8-729-424-08	TRANSISTOR UN2111	(FR model)
		<RESISTOR>	

REF. NO.	PART NO.	DESCRIPTION			REMARK
R001	1-216-049-11	RES-CHIP	1K	5%	1/10W
R004	1-216-049-11	RES-CHIP	1K	5%	1/10W
R005	1-216-089-11	RES-CHIP	47K	5%	1/10W
R006	1-216-041-00	RES-CHIP	470	5%	1/10W
R007	1-249-421-11	CARBON	2.2K	5%	1/4W
R009	1-216-049-11	RES-CHIP	1K	5%	1/10W
R011	1-216-025-11	RES-CHIP	100	5%	1/10W (except ESP model)
R012	1-216-025-11	RES-CHIP	100	5%	1/10W
R013	1-216-049-11	RES-CHIP	1K	5%	1/10W
R014	1-216-049-11	RES-CHIP	1K	5%	1/10W
R015	1-216-049-11	RES-CHIP	1K	5%	1/10W
R016	1-216-049-11	RES-CHIP	1K	5%	1/10W
R017	1-216-025-11	RES-CHIP	100	5%	1/10W
R018	1-216-041-00	RES-CHIP	470	5%	1/10W
R020	1-216-025-11	RES-CHIP	100	5%	1/10W
R022	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R025	1-216-073-00	RES-CHIP	10K	5%	1/10W
R026	1-216-049-11	RES-CHIP	1K	5%	1/10W
R027	1-216-079-00	RES-CHIP	18K	5%	1/10W
R029	1-216-049-11	RES-CHIP	1K	5%	1/10W
R030	1-216-033-00	RES-CHIP	220	5%	1/10W
R036	1-216-025-11	RES-CHIP	100	5%	1/10W
R037	1-216-025-11	RES-CHIP	100	5%	1/10W
R038	1-216-025-11	RES-CHIP	100	5%	1/10W
R039	1-216-025-11	RES-CHIP	100	5%	1/10W
R040	1-216-073-00	RES-CHIP	10K	5%	1/10W
R041	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R042	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R043	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R044	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R045	1-216-295-11	SHORT	0		
R046	1-216-025-11	RES-CHIP	100	5%	1/10W
R047	1-216-025-11	RES-CHIP	100	5%	1/10W
R048	1-216-045-00	RES-CHIP	680	5%	1/10W
R049	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R050	1-216-025-11	RES-CHIP	100	5%	1/10W (except ESP model)
R051	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R052	1-216-073-00	RES-CHIP	10K	5%	1/10W
R053	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R054	1-216-049-11	RES-CHIP	1K	5%	1/10W
R055	1-216-033-00	RES-CHIP	220	5%	1/10W
R056	1-216-033-00	RES-CHIP	220	5%	1/10W
R057	1-216-049-11	RES-CHIP	1K	5%	1/10W
R058	1-216-039-00	RES-CHIP	390	5%	1/10W
R059	1-216-049-11	RES-CHIP	1K	5%	1/10W
R060	1-216-049-11	RES-CHIP	1K	5%	1/10W
R064	1-216-049-11	RES-CHIP	1K	5%	1/10W
R065	1-216-049-11	RES-CHIP	1K	5%	1/10W
R067	1-216-025-11	RES-CHIP	100	5%	1/10W
R068	1-216-025-11	RES-CHIP	100	5%	1/10W
R075	1-216-049-11	RES-CHIP	1K	5%	1/10W
R076	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R077	1-216-089-11	RES-CHIP	47K	5%	1/10W
R078	1-216-073-00	RES-CHIP	10K	5%	1/10W
R083	1-216-069-00	RES-CHIP	6.8K	5%	1/10W (except ESP model)
R084	1-216-033-00	RES-CHIP	220	5%	1/10W
R085	1-216-049-11	RES-CHIP	1K	5%	1/10W
R087	1-216-097-11	RES-CHIP	100K	5%	1/10W (except ESP model)
R088	1-216-123-11	RES-CHIP	1.2M	5%	1/10W (except ESP model)
R089	1-216-025-11	RES-CHIP	100	5%	1/10W (except ESP model)
R090	1-216-069-00	RES-CHIP	6.8K	5%	1/10W (except ESP model)
R091	1-216-123-11	RES-CHIP	1.2M	5%	1/10W (except ESP model)
R092	1-216-121-11	RES-CHIP	1M	5%	1/10W (except ESP model)
R093	1-216-057-00	RES-CHIP	2.2K	5%	1/10W (except ESP model)
R095	1-216-295-11	SHORT	0		(except ESP model)
R096	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R097	1-216-073-00	RES-CHIP	10K	5%	1/10W
R098	1-216-025-11	RES-CHIP	100	5%	1/10W
R100	1-216-073-00	RES-CHIP	10K	5%	1/10W
R101	1-216-073-00	RES-CHIP	10K	5%	1/10W
R204	1-247-807-31	CARBON	100	5%	1/4W
R205	1-216-049-11	RES-CHIP	1K	5%	1/10W
R206	1-216-109-00	RES-CHIP	330K	5%	1/10W

MA10

REF. NO.	PART NO.	DESCRIPTION			REMARK
R210	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R211	1-216-073-00	RES-CHIP	10K	5%	1/10W
R212	1-216-049-11	RES-CHIP	1K	5%	1/10W
R216	1-249-385-11	CARBON	2.2	5%	1/4W
R218	1-216-105-91	RES-CHIP	220K	5%	1/10W
R219	1-216-033-00	RES-CHIP	220	5%	1/10W
R220	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R263	1-216-025-11	RES-CHIP	100	5%	1/10W
R264	1-216-025-11	RES-CHIP	100	5%	1/10W
R265	1-216-295-11	SHORT	0		
R401	1-216-073-00	RES-CHIP	10K	5%	1/10W
R402	1-216-073-00	RES-CHIP	10K	5%	1/10W
R403	1-216-049-11	RES-CHIP	1K	5%	1/10W
R404	1-216-073-00	RES-CHIP	10K	5%	1/10W
R405	1-216-073-00	RES-CHIP	10K	5%	1/10W
R406	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R407	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R408	1-216-073-00	RES-CHIP	10K	5%	1/10W
R409	1-216-073-00	RES-CHIP	10K	5%	1/10W
R410	1-216-049-11	RES-CHIP	1K	5%	1/10W
R411	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R412	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R414	1-216-097-11	RES-CHIP	100K	5%	1/10W
R415	1-216-097-11	RES-CHIP	100K	5%	1/10W
R416	1-216-105-91	RES-CHIP	220K	5%	1/10W
R417	1-216-111-00	RES-CHIP	390K	5%	1/10W
R418	1-216-097-11	RES-CHIP	100K	5%	1/10W
R419	1-216-097-11	RES-CHIP	100K	5%	1/10W
R420	1-216-117-00	RES-CHIP	680K	5%	1/10W
R421	1-216-079-00	RES-CHIP	18K	5%	1/10W
R422	1-216-689-11	RES-CHIP	39K	5%	1/10W
R423	1-216-049-11	RES-CHIP	1K	5%	1/10W
R424	1-216-675-91	METAL CHIP	10K	0.50%	1/10W
R425	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R426	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R427	1-216-103-00	RES-CHIP	180K	5%	1/10W
R428	1-216-675-91	METAL CHIP	10K	0.50%	1/10W
R429	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R430	1-216-037-00	RES-CHIP	330	5%	1/10W
R432	1-216-073-00	RES-CHIP	10K	5%	1/10W
R435	1-216-049-11	RES-CHIP	1K	5%	1/10W
R436	1-216-043-11	RES-CHIP	560	5%	1/10W
R437	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R438	1-216-295-11	SHORT	0		
R439	1-216-089-11	RES-CHIP	47K	5%	1/10W
R440	1-216-089-11	RES-CHIP	47K	5%	1/10W
R441	1-216-089-11	RES-CHIP	47K	5%	1/10W
R442	1-216-089-11	RES-CHIP	47K	5%	1/10W
R443	1-216-049-11	RES-CHIP	1K	5%	1/10W
R444	1-216-295-11	SHORT	0		
R445	1-216-089-11	RES-CHIP	47K	5%	1/10W
R446	1-216-075-00	RES-CHIP	12K	5%	1/10W
R447	1-216-081-00	RES-CHIP	22K	5%	1/10W
R448	1-216-075-00	RES-CHIP	12K	5%	1/10W
R449	1-216-081-00	RES-CHIP	22K	5%	1/10W
R450	1-216-077-91	RES-CHIP	15K	5%	1/10W
R451	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R452	1-249-400-11	CARBON	39	5%	1/4W
R453	1-249-400-11	CARBON	39	5%	1/4W
R454	1-249-406-11	CARBON	120	5%	1/4W
R455	1-216-089-11	RES-CHIP	47K	5%	1/10W
R456	1-216-089-11	RES-CHIP	47K	5%	1/10W
R457	1-216-085-00	RES-CHIP	33K	5%	1/10W
R458	1-216-085-00	RES-CHIP	33K	5%	1/10W
R459	1-216-085-00	RES-CHIP	33K	5%	1/10W
R460	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R461	1-216-085-00	RES-CHIP	33K	5%	1/10W
R465	1-216-045-00	RES-CHIP	680	5%	1/10W
R468	1-216-089-11	RES-CHIP	47K	5%	1/10W
R470	1-216-041-00	RES-CHIP	470	5%	1/10W
R471	1-216-041-00	RES-CHIP	470	5%	1/10W
R472	1-216-041-00	RES-CHIP	470	5%	1/10W
R473	1-216-041-00	RES-CHIP	470	5%	1/10W
R474	1-216-073-00	RES-CHIP	10K	5%	1/10W
R476	1-216-049-11	RES-CHIP	1K	5%	1/10W
R477	1-216-049-11	RES-CHIP	1K	5%	1/10W
R478	1-216-049-11	RES-CHIP	1K	5%	1/10W
R479	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R480	1-216-049-11	RES-CHIP	1K	5%	1/10W
R481	1-216-049-11	RES-CHIP	1K	5%	1/10W
R484	1-216-049-11	RES-CHIP	1K	5%	1/10W
R487	1-216-045-00	RES-CHIP	680	5%	1/10W
R701	1-216-025-11	RES-CHIP	100	5%	1/10W
R702	1-216-045-00	RES-CHIP	680	5%	1/10W
R705	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R706	1-216-081-00	RES-CHIP	22K	5%	1/10W
R707	1-216-073-00	RES-CHIP	10K	5%	1/10W
R708	1-216-049-11	RES-CHIP	1K	5%	1/10W
R709	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R710	1-216-049-11	RES-CHIP	1K	5%	1/10W
R711	1-216-049-11	RES-CHIP	1K	5%	1/10W
R712	1-216-049-11	RES-CHIP	1K	5%	1/10W
R801	1-216-041-00	RES-CHIP	470	5%	1/10W
R803	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R804	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R810	1-216-041-00	RES-CHIP	470	5%	1/10W
R811	1-216-041-00	RES-CHIP	470	5%	1/10W
R813	1-216-047-91	RES-CHIP	820	5%	1/10W
R814	1-216-041-00	RES-CHIP	470	5%	1/10W
R815	1-249-413-11	CARBON	470	5%	1/4W
R819	1-216-081-00	RES-CHIP	22K	5%	1/10W
R820	1-216-081-00	RES-CHIP	22K	5%	1/10W
R823	1-216-049-11	RES-CHIP	1K	5%	1/10W
R824	1-216-049-11	RES-CHIP	1K	5%	1/10W
R827	1-216-025-11	RES-CHIP	100	5%	1/10W
R829	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R831	1-216-295-11	SHORT	0		
R835	1-216-041-00	RES-CHIP	470	5%	1/10W
R837	1-216-073-00	RES-CHIP	10K	5%	1/10W
R838	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R839	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R840	1-216-025-11	RES-CHIP	100	5%	1/10W
R841	1-216-062-00	RES-CHIP	3.6K	5%	1/10W
R843	1-216-041-00	RES-CHIP	470	5%	1/10W
R845	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R847	1-216-295-11	SHORT	0		
R848	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R849	1-216-295-11	SHORT	0		
R850	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R852	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R856	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R857	1-216-049-11	RES-CHIP	1K	5%	1/10W
R858	1-216-049-11	RES-CHIP	1K	5%	1/10W
R859	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R860	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R861	1-216-089-11	RES-CHIP	47K	5%	1/10W
R862	1-216-045-00	RES-CHIP	680	5%	1/10W
R867	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R869	1-216-049-11	RES-CHIP	1K	5%	1/10W
R870	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R871	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R872	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R873	1-216-049-11	RES-CHIP	1K	5%	1/10W
R875	1-216-295-11	SHORT	0		
R881	1-216-089-11	RES-CHIP	47K	5%	1/10W
R882	1-216-689-11	RES-CHIP	39K	5%	1/10W
R883	1-216-049-11	RES-CHIP	1K	5%	1/10W
R885	1-216-049-11	RES-CHIP	1K	5%	1/10W

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

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Ne les remplacer que par une pièce portant le numéro spécifié.

MA10

REF. NO.	PART NO.	DESCRIPTION			REMARK
R901	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R902	1-216-025-11	RES-CHIP	100	5%	1/10W
R903	1-216-025-11	RES-CHIP	100	5%	1/10W
R904	1-216-025-11	RES-CHIP	100	5%	1/10W
R905	1-216-025-11	RES-CHIP	100	5%	1/10W
R906	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R907	1-216-089-11	RES-CHIP	47K	5%	1/10W
R908	1-216-025-11	RES-CHIP	100	5%	1/10W
R909	1-216-041-00	RES-CHIP	470	5%	1/10W
R910	1-216-037-00	RES-CHIP	330	5%	1/10W
R911	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R912	1-216-082-00	RES-CHIP	24K	5%	1/10W
R913	1-216-025-11	RES-CHIP	100	5%	1/10W
R914	1-216-025-11	RES-CHIP	100	5%	1/10W
R915	1-216-029-00	RES-CHIP	150	5%	1/10W
R916	1-216-029-00	RES-CHIP	150	5%	1/10W
R917	1-216-025-11	RES-CHIP	100	5%	1/10W
R918	1-247-807-31	CARBON	100	5%	1/4W
R919	1-216-029-00	RES-CHIP	150	5%	1/10W
R920	1-216-041-00	RES-CHIP	470	5%	1/10W
R921	1-216-049-11	RES-CHIP	1K	5%	1/10W
R922	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R924	1-216-073-00	RES-CHIP	10K	5%	1/10W
R925	1-216-073-00	RES-CHIP	10K	5%	1/10W
R927	1-216-049-11	RES-CHIP	1K	5%	1/10W
R928	1-216-097-11	RES-CHIP	100K	5%	1/10W
R929	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R930	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1002	1-249-408-11	CARBON	180	5%	1/4W
R1003	1-249-381-11	CARBON	1	5%	1/4W
R1004	1-216-063-91	RES-CHIP	3.9K	5%	1/10W
R1005	1-249-401-11	CARBON	47	5%	1/4W
R1006	1-216-075-00	RES-CHIP	12K	5%	1/10W
R1007	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1008	1-216-035-00	RES-CHIP	270	5%	1/10W
R1010	1-216-109-00	RES-CHIP	330K	5%	1/10W
R1011	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1012	1-216-047-91	RES-CHIP	820	5%	1/10W
R1013	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1014	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1015	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R1017	1-249-426-11	CARBON	5.6K	5%	1/4W
R1018	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R1019	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1020	1-216-025-11	RES-CHIP	100	5%	1/10W
R1023	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1024	1-216-093-91	RES-CHIP	68K	5%	1/10W
R1025	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
R1101	1-216-045-00	RES-CHIP	680	5%	1/10W
R1102	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1103	1-216-045-00	RES-CHIP	680	5%	1/10W
R1104	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R1106	1-216-022-00	RES-CHIP	75	5%	1/10W
R1108	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R1109	1-216-079-00	RES-CHIP	18K	5%	1/10W
R1110	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1111	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R1112	1-216-047-91	RES-CHIP	820	5%	1/10W
R1113	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R1115	1-216-055-00	RES-CHIP	1.8K	5%	1/10W
R1116	1-216-047-91	RES-CHIP	820	5%	1/10W
R1119	1-216-295-11	SHORT	0		
R1128	1-216-037-00	RES-CHIP	330	5%	1/10W
R1129	1-216-037-00	RES-CHIP	330	5%	1/10W
R1136	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R1701	⚠1-260-135-91	CARBON	1M	5%	1/2W
R1801	1-216-089-11	RES-CHIP	47K	5%	1/10W (FR model)
R1802	1-216-071-00	RES-CHIP	8.2K	5%	1/10W (FR model)
R1803	1-216-072-00	RES-CHIP	9.1K	5%	1/10W (FR model)
R1804	1-216-080-00	RES-CHIP	20K	5%	1/10W (FR model)
R1805	1-216-083-00	RES-CHIP	27K	5%	1/10W (FR model)
R1806	1-216-071-00	RES-CHIP	8.2K	5%	1/10W (FR model)
R1807	1-216-049-11	RES-CHIP	1K	5%	1/10W (FR model)
R1808	1-216-689-11	RES-CHIP	39K	5%	1/10W (FR model)
R1809	1-216-083-00	RES-CHIP	27K	5%	1/10W (FR model)
R1810	1-216-041-00	RES-CHIP	470	5%	1/10W (FR model)
R1811	1-216-067-00	RES-CHIP	5.6K	5%	1/10W (FR model)
R1812	1-216-081-00	RES-CHIP	22K	5%	1/10W (FR model)
R1813	1-216-077-91	RES-CHIP	15K	5%	1/10W (FR model)
R1814	1-216-073-00	RES-CHIP	10K	5%	1/10W (FR model)
R1815	1-216-089-11	RES-CHIP	47K	5%	1/10W (FR model)
R1816	1-216-059-00	RES-CHIP	2.7K	5%	1/10W (FR model)
R1817	1-216-089-11	RES-CHIP	47K	5%	1/10W (FR model)
R1818	1-216-089-11	RES-CHIP	47K	5%	1/10W (FR model)
R1819	1-216-073-00	RES-CHIP	10K	5%	1/10W (FR model)
R1820	1-216-295-11	SHORT	0		(FR model)
R1821	1-216-083-00	RES-CHIP	27K	5%	1/10W (FR model)
R1822	1-216-689-11	RES-CHIP	39K	5%	1/10W (FR model)
R1823	1-216-073-00	RES-CHIP	10K	5%	1/10W (FR model)
R1831	1-216-295-11	SHORT	0 (FR model)		

<SWITCH>

S401	1-771-155-11	SWITCH, ROTARY (MODE SW)
S451	1-762-108-11	SWITCH, PUSH (1 KEY) (REC PRF)
S1101	1-571-532-21	SWITCH, TACTIL (TIMER REC)
S1102	1-570-577-11	SWITCH, PUSH (STOP/REC)
S1103	1-570-577-11	SWITCH, PUSH (REW/VOL -)
S1104	1-570-577-11	SWITCH, PUSH (PLAY/VOL +)
S1105	1-571-532-21	SWITCH, TACTIL (CH -)
S1106	1-570-577-11	SWITCH, PUSH (FWD/CH +)
S1107	1-570-577-11	SWITCH, PUSH (PAUSE)
S1108	1-571-532-21	SWITCH, TACTIL (POWER)
S1109	1-571-532-21	SWITCH, TACTIL (INPUT SELECT)
S1701	⚠1-571-433-31	SWITCH, PUSH (AC POWER)

<TRANSFORMER>

T1001	1-431-097-11	TRANSFORMER, BIAS OSCILLATION
T1701	⚠1-427-962-11	TRANSFORMER, LINE FILTER

<VARISTOR>

VDR601	⚠1-803-830-31	VARISTOR (ERZV14D621)

<CRYSTAL>

X001	1-767-755-11	VIBRATOR, CRYSTAL
X251	1-579-463-11	VIBRATOR, CRYSTAL
X430	1-760-494-11	VIBRATOR, CRYSTAL

MA10 H10

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

REF. NO.	PART NO.	DESCRIPTION	REMARK
X801	1-579-608-11	VIBRATOR, CRYSTAL	
X901	1-578-774-11	VIBRATOR, CRYSTAL	
**********			
	* A-1646-216-A	H10 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN1301	1-766-719-11	CONNECTOR, BOARD TO BOARD 10P	
		<DIODE>	
D1301	8-719-053-43	DIODE SLR-325VCT31 (REC)	
D1302	8-719-053-43	DIODE SLR-325VCT31 (TIMER REC)	
D1303	8-719-061-96	DIODE SLR-325DCT31 (DIAL TIMER)	
D1304	8-719-053-43	DIODE SLR-325VCT31 (STBY)	
D1305	8-719-061-96	DIODE SLR-325DCT31 (DIAL TIMER)	
D1306	8-719-061-96	DIODE SLR-325DCT31 (DIAL TIMER)	
		<CHIP CONDUCTOR>	
JR165	1-216-296-91	SHORT 0	
		<TRANSISTOR>	
Q1301	8-729-902-99	TRANSISTOR DTC114TK	
		<RESISTOR>	
R1301	1-249-403-11	CARBON 68 5% 1/4W	
R1302	1-249-406-11	CARBON 120 5% 1/4W	
R1307	1-216-073-00	RES-CHIP 10K 5% 1/10W	
R1308	1-216-073-00	RES-CHIP 10K 5% 1/10W	
		<SWITCH>	
S1301	1-762-196-21	SWITCH, TACT (EJECT)	
S1302	1-418-156-11	ENCODER, ROTARYRY (DIAL TIMER)	
**********			

REF. NO.	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
		**********	
	⚠ 1-251-317-32	CAP ASSY, HIGH VOLTAGE	(14inch model)
	⚠ 1-416-864-12	COIL, VM	
	⚠ 1-419-548-11	COIL, DEGAUSSING	(14inch model)
	1-419-494-11	COIL, CHOKE 56.0 mH	(21inch model)
	⚠ 1-419-772-11	COIL, DEGAUSSING	(21inch model)
	1-452-032-00	MAGNET, DISC ; 10mmø	
	1-452-094-00	MAGNET, ROTATABLE DISC ; 15mmø	
	⚠ 1-452-728-61	COIL, NA ROTATION (RT-154)	(21inch model)
	1-529-474-11	SPEAKER (5CM)	(14inch model)
	1-529-710-11	SPEAKER (5X9CM)	(21inch model)
	⚠ 1-765-286-11	CORD, POWER	(FR/AEP/ESP model)
	⚠ 1-776-860-12	POWER CORD, FILTER (UK)	(UK model)
	1-900-905-56	CONNECTOR ASSY 7P	
	1-900-905-60	CONNECTOR ASSY 5P	
	1-900-905-61	CONNECTOR ASSY 35P	
	1-900-905-74	CONNECTOR ASSY, MICRO 5P	(21inch model)
	⚠ 8-451-401-21	DEFLECTION YOKE (Y14RSA-L)	(14inch model)
	⚠ 8-451-505-41	DEFLECTION YOKE (Y21RSA-L)	(21inch model)
V901	⚠ 8-738-570-05	PICTURE TUBE (A34LRG70X)	(14inch model)
V901	⚠ 8-738-836-05	PICTURE TUBE (A51LPT60X)	(21inch model)
**********			
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	1-501-615-31	ANTENNA, LOOP	(14inch UK model)
	* 4-039-905-02	BAG, PROTECTION	(14inch model)
	* 4-395-957-01	BAG, PROTECTION	(21inch model)
	* 4-205-654-01	CUSHION LOWER ASSY	(14inch model)
	* 4-205-655-01	CUSHION UPPER ASSY	(14inch model)
	4-205-660-01	INDIVIDUAL CARTON	(14inch model)
	4-205-687-11	INSTRUCTION, MANUAL	(ESP model)
	4-205-687-21	INSTRUCTION, MANUAL	(FR model)
	4-205-687-31	INSTRUCTION, MANUAL	(UK model)
	4-205-687-41	INSTRUCTION, MANUAL	(AEP model)
	4-205-687-51	INSTRUCTION, MANUAL	(ESP model)
	4-205-687-61	INSTRUCTION, MANUAL	(AEP model)
**********			
		REMOTE COMMANDER	
		**********	
	1-476-246-11	REMOTE COMMANDER (RM-814)	(AEP/ESP model)
	1-476-247-11	REMOTE COMMANDER (RM-815)	(UK model)
	1-476-248-11	REMOTE COMMANDER (RM-816)	(FR model)
	9-882-043-01	POCKET, COVER (FOR RM-814/815/816)	

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